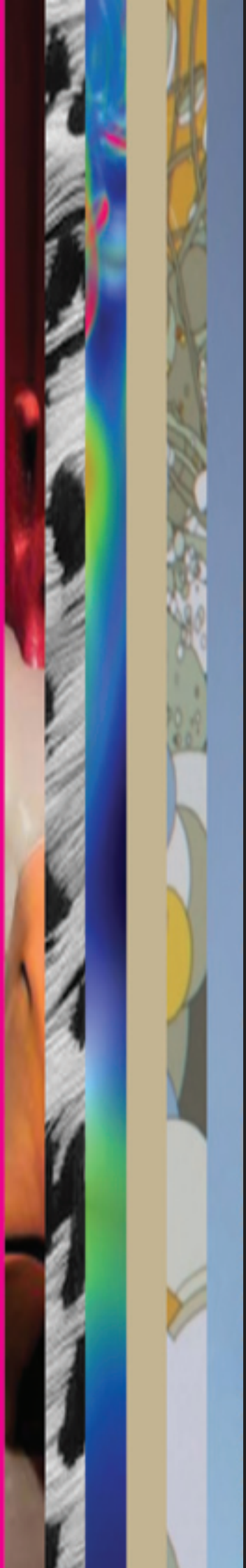

PROGRAM GUIDE

Sponsored by ACM SIGGRAPH

Pacifico Yokohama • Yokohama, Japan
SIGGRAPH ASIA 2009
THE 2ND ACM SIGGRAPH CONFERENCE AND EXHIBITION IN ASIA

conference 16-19 DECEMBER 2009 | exhibition 17-19 DECEMBER 2009 | www.SIGGRAPH.ORG/ASIA2009

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SIGGRAPHASIA2009

CONFERENCE REGISTRATION CATEGORIES

- ■ Full Conference Access
- ● One-Day Full Conference
- ▲ Basic Conference
- ◆ Exhibits Only

	Tuesday 15 December	Wednesday 16 December	Thursday 17 December	Friday 18 December	Saturday 19 December
Registration	15:00 - 19:00	8:00 - 18:00	8:00 - 18:00	8:00 - 18:00	8:00 - 15:00
Merchandise Pickup & SIGGRAPH Asia Store		8:00 - 18:00	8:00 - 18:00	8:00 - 18:00	8:00 - 16:30
■ ● ▲ Art Gallery Emerging Technologies			9:30 - 18:30	9:30 - 18:30	9:30 - 17:00
Computer Animation Festival					
■ ● ▲ Animation Theater			9:00 - 18:00	9:00 - 18:00	9:00 - 18:00
■ ● Electronic Theater			19:00 - 21:00	19:00 - 21:00	16:15 - 18:15 19:00 - 21:00
■ ● Courses		9:00 - 18:00	9:00 - 18:00	9:00 - 18:00	9:00 - 18:00
■ ● Educators Program			9:00 - 18:00	9:00 - 18:00	9:00 - 18:00
■ ● ▲ Posters			9:00 - 18:00	9:00 - 18:00	9:00 - 18:00
■ ● Sketches			9:00 - 18:00	9:00 - 18:00	9:00 - 18:00
■ ● ▲ Special Sessions			9:00 - 18:00	9:00 - 18:00	9:00 - 18:00
■ ● Technical Papers			9:00 - 18:30	8:30 - 18:00	9:00 - 18:30
■ ● Featured Speakers			11:00 - 12:30	14:15 - 15:45	14:15 - 15:45
■ ● ▲ Technical Papers Fast Forward Session		18:00 - 20:00			
■ ● ▲ ◆ Exhibition			9:30 - 18:30	9:30 - 18:30	9:30 - 17:00
■ ● ▲ ◆ Exhibitor Tech Talks			10:00 - 18:00	10:00 - 18:00	10:00 - 16:00
■ ● ▲ ◆ Digital Bazaar			9:30 - 18:30	9:30 - 18:30	9:30 - 17:00
■ ● ▲ ◆ Job Fair			9:30 - 18:30	9:30 - 18:30	9:30 - 17:00

Conference schedule subject to change.

Conference Registration Categories

■ Full Conference Access Pass

Includes admission to all programs and events of SIGGRAPH Asia 2009.
The Full Conference DVD-ROM is also included.

● Full Conference One-Day Access Pass

Includes admission to all programs and events for one day of SIGGRAPH Asia 2009.
Access to the Exhibition and Exhibitor Tech talks is included for three days, 17-19 December.

▲ Basic Conference Access Pass

Includes admission to the Art Gallery and Emerging Technologies, the Animation Theater, Posters, Technical Papers Fast Forward, the Exhibition, and Exhibitor Tech Talks for all conference days.
An Electronic Theater ticket and the Full Conference DVD-ROM can be purchased separately.

◆ Exhibits Only Ticket

Exhibits Only admission can be purchased at SIGGRAPH Asia 2009 for ¥1,000. It is also available online upon invitation from a SIGGRAPH Asia 2009 exhibitor. You must receive an invitation code in order to be eligible to register online. Exhibits Only tickets include admission to the Exhibition, Exhibitor Tech Talks, Digital Bazaar, and Job Fair only.

	Before 1 Nov	After 31 Oct	After 14 Dec
Full Conference Access Pass			
ACM/ACM SIGGRAPH/ EUROGRAPHICS/SIGCHI	**¥ 67,000**	**¥ 75,000**	**¥ 81,600**
Non-Member	**¥ 73,000**	**¥ 81,000**	**¥ 87,600**
Student	**¥ 33,500**	**¥ 37,000**	**¥ 41,000**
Full Conference One-Day Access Pass			
All Categories	**¥ 26,500**	**¥ 30,000**	**¥ 32,000**
Basic Conference Access Pass			
All Categories	**¥ 4,750**	**¥ 6,000**	**¥ 7,300**
Exhibits Only Ticket			
Available for Purchase at SIGGRAPH Asia 2009			**¥ 1,000**

■ ● ▲	Art Gallery
■ ●	Computer Animation Festival
■ ●	Electronic Theater
■ ● ▲	Animation Theater
■ ●	Courses
■ ● ▲ ◆	Digital Bazaar
■ ●	Educators Program
■ ● ▲	Emerging Technologies
■ ● ▲	Exhibition
■ ● ▲ ◆	Exhibitor Tech Talks
■ ● ▲	Fast Forward Session Technical Papers
■ ●	Featured Speakers
■ ● ▲ ◆	Job Fair
■ ● ▲	Posters
■ ● ▲	Special Sessions
■ ●	Sketches
■ ●	Technical Papers
■	Full Conference DVD-ROM

参加登録の種類と参加登録費のご案内

■ フルカンファレンスアクセスパス

シーグラフアジア 2009の全プログラムおよび全イベントにご参加頂けます。カンファレンスのプログラム内容を掲載したフルカンファレンスDVDも含まれます。

● フルカンファレンス1日券

シーグラフアジア 2009の全プログラムおよびイベントに1日参加頂けます。展示会と展示社技術トークには12月17-19日の3日間に渡りご参加頂けます。

▲ ベーシックカンファレンスアクセスパス

アートギャラリーとエマージングテクノロジー、アニメーションシアター、ポスター会場、テクニカルペーパーファーストフォーワードセッション、展示会、展示社技術トークに会期中全日ご参加頂けます。エレクトロニックシアターおよびフルカンファレンスDVDは別途購入可能です。

◆ 展示会入場券

会場にて1,000円でお求め頂けます。
また、この券は、シーグラフアジア 2009展示者からの招待コードをお持ちの方はオンライン事前登録をお願いしております。展示会、展示社技術トーク、デジタル屋台、ジョブフェアのみご参加頂けます。

	10月31日まで (日本時間：11/1 午前8時59分まで)	11月1日以降 (日本時間：11/1 午前9時以降)	12月14日以降 (日本時間：12/15 午前9時以降)
フルカンファレンスアクセスパス			
会員	**¥ 67,000**	**¥ 75,000**	**¥ 81,600**
非会員	**¥ 73,000**	**¥ 81,000**	**¥ 87,600**
学生	**¥ 33,500**	**¥ 37,000**	**¥ 41,000**
フルカンファレンスパス 1日券			
全カテゴリー共通	**¥ 26,500**	**¥ 30,000**	**¥ 32,000**
ベーシックカンファレンスアクセスパス			
全カテゴリー共通	**¥ 4,750**	**¥ 6,000**	**¥ 7,300**
エレクトロニックシアターチケット	**¥ 2,500**	**¥ 2,500**	**¥ 2,500**
会場にてお求め頂けます。 (オンライン登録で他カテゴリーの券をお求めの際には、一緒に購入可能ですが、エレクトロニックシアターチケットのみのオンライン購入は出来ません。)			
展示会のみ(展示会入場券)			
会場にて購入いただけます。	**¥ 1,000**	**¥ 1,000**	**¥ 1,000**

■ ● ▲	アートギャラリー
	コンピュータアニメーションフェスティバル
■ ●	エレクトロニックシアター
■ ● ▲	アニメーションシアター
■ ●	コース
■ ● ▲ ◆	デジタル屋台
■ ●	エデュケーターズプログラム
■ ● ▲	エマージングテクノロジー
■ ● ▲	展示会
■ ● ▲ ◆	展示技術トーク
■ ● ▲	テクニカルペーパーファーストフォーワードセッション
■ ●	基調講演
■ ● ▲ ◆	ジョブフェア
■ ● ▲	ポスター展示会場
■ ● ▲	スペシャルセッション
■ ●	スケッチセッション
■ ●	テクニカルペーパー
■	フルカンファレンスDVD

Registration Policies

The registration deadlines are GMT/UTC times. For example, "Before 1 Nov" means that the discounted rate is available until 31 Oct, 23:59 GMT/UTC.

Registration fees are subject to local consumption tax: 5%.

EXHIBITS ONLY TICKETS

Exhibits Only tickets are also available online upon invitation from a SIGGRAPH Asia 2009 exhibitor. You must receive an invitation code in order to be eligible to register online. Exhibits Only tickets include admission to the Exhibition and Exhibitor Tech Talks for three days, 17-19 December.

MEMBER RATE

If you are currently an ACM, ACM SIGGRAPH, Eurographics, or SIGCHI member, you are eligible for member discounts. You must provide your membership number to receive the discount; otherwise, you will be charged the non-member rate. Local or regional ACM SIGGRAPH memberships are not eligible for registration discounts.

STUDENT RATE

You must be a full-time student and be an ACM student member to qualify. You must provide your 2009 ACM student membership number to qualify for student membership rates. This applies for those registering in advance as well as at the conference.

CANCELLATION & REFUND POLICY

Cancellation requests must be made in writing and received on or before 28 November 2009 (23:59 GMT/UTC). Registration-fee refunds will be provided for requests received on or before 28 November. No refunds will be provided for cancellations after this date. A processing fee of ¥ 8,500 applies for all approved refunds. Basic Conference and One-Day registrations are not refundable.

Technical Materials

Printed Materials

NOT included with any registration category. Printed materials are available for purchase at SIGGRAPH Asia 2009.

ACM TRANSACTIONS ON GRAPHICS (CONFERENCE PROCEEDINGS SPECIAL ISSUE)

ACM Transaction on Graphics (TOG) is the foremost peer-reviewed journal in the graphics field.
All papers presented at SIGGRAPH Asia 2009 will be published in this special issue of TOG.

DIGITAL EXPERIENCES

The permanent record of images from the Art Gallery, the Computer Animation Festival, and Emerging Technologies.

FULL CONFERENCE DVD-ROM

Included with Full Conference Access registration, and available for purchase at SIGGRAPH Asia 2009.

This digital publication contains the electronic version of the Technical Papers, including images and supplemental material; the Course notes, including supplemental materials (movies, source code, HTML presentations); and abstracts and supplemental materials from the Educators Program, Sketches, and Posters. The content of the printed version of the ACM Transactions on Graphics (Conference Proceedings Special Issue) and the Digital Experiences: the SIGGRAPH ASIA 2009 Art Gallery, Emerging Technologies, and Computer Animation Festival Catalog are also included on the Full Conference DVD-ROM.

参加登録ポリシー

展示会入場券

この券は、シーグラフアジア 2009展示者からの招待コードをお持ちの方はオンライン事前登録をお願いしております。展示会、展示社技術トークのみご参加頂けます。

会員特別割引価格

現在、ACM、ACM SIGGRAPH,、又は SIGCHI会員の方には特別割引がございます。参加・入場ご登録の際にメンバーカード番号を必ずご入力、ご提示下さい。この番号が登録されていない場合には特別価格は適用できませんので予めご注意下さい。尚、各国、および特定の地域に限られたACMローカルチャプターには割引は適用しません。

学生割引価格

フルタイムの学生で、かつACM SIGGRAPH学生会員の方には学生特別価格が適用されます。ご登録の際には、2009年ACM SIGGRAPH学生会員番号を必ずご入力下さい。

詳細情報と会員登録フォーム

キャンセルポリシー:
2009年11月28日GMT23:59(日本時間11月29日午前8時59分まで)までに所定のメールアドレス(オンライン登録開始時に公開)宛に通知頂いた場合のみ取消は可能です。この期限を過ぎたキャンセルの場合、返金は致しかねます。

※フルカンファレンスパスのみキャンセル後の返金は可能です。

※ベーシックカンファレンスパスと1日券のキャンセルの場合の返金は致しかねます。

※返金の際には、キャンセル手数料として8,500円を申し受けます。

刊行物、テクニカルマテリアル

テクニカルペーパー論文を含む“ACM Transactions on Graphics(カンファレンス特別発行版)”、アートギャラリー、コンピュータアニメーションフェスティバル、エマージングテクノロジープログラムの画像と情報を集めた“Digital Experiences”はいずれのカテゴリーの参加登録費には含まれません。カンファレンスショップにて別途購入願います。

フルカンファレンスDVD

このDVDには、写真その他を含むテクニカルペーパー論文、動画・ソースコード・HTML版プレゼンテーションを含むコースプログラム資料、エデュケーターズプログラムの教育論文、ワークショップとトークのアブストラクト、スケッチ&ポスタープログラムのアブストラクトが含まれ、デジタルメディアを介してプログラムをご覧になれます。ACM Transactions on Graphics(カンファレンス特別発行版)とアートギャラリー、コンピュータアニメーションフェスティバル、エマージングテクノロジープログラムの画像や情報を集めた“Digital Experiences”の内容も含まれます。このDVDはフルカンファレンスアクセスカテゴリーで参加登録された方全てにご提供します。またカンファレンスショップでもご購入頂けます。

1日券、ベーシックカンファレンスのカテゴリーにはこのDVDは含まれません。これら全ての刊行物、DVDはカンファレンスショップにてご購入頂けます。

価格リスト

フルカンファレンスDVD
会員:¥ 5,000 / 非会員:¥ 7,500

ACM雑誌「Transactions on Graphics」カンファレンス特別発行版
会員: ¥ 2,500 / 非会員: ¥ 3,800

「Digital Experiences」
アートギャラリー、コンピュータアニメーションフェスティバル、
エマージングテクノロジープログラムの画像や情報を集めた本
会員: ¥ 2,500 / 非会員: ¥ 3,800

「コンピュータアニメーションフェスティバル ハイライトビデオ レビュー版166号」
会員: ¥ 3,200 / 非会員: ¥ 4,800

General Information

Conference Policies

• SIGGRAPH Asia 2009 reserves the right to deny registration or entrance to any attendee or prospective attendee, and to cancel an existing registration, if it determines that a registration or an attendee is not in the best interest of SIGGRAPH Asia 2009 or ACM SIGGRAPH.

• Lost badges cannot be replaced. If you lose your badge you must register again at the published rates to obtain a new badge.

• SIGGRAPH Asia 2009 conference documentation and pre-purchased merchandise will not be shipped, nor will refunds be given for any material not picked up at the Merchandise Pickup Center.

Camera/Recording Policies

No cameras or recording devices are permitted at SIGGRAPH Asia 2009. Abuse of this policy will result in revocation of the individual's registration credentials.

SIGGRAPH Asia 2009 employs a professional photographer and reserves the right to use all images that this photographer takes during the conference for publication and promotion of future ACM SIGGRAPH events.

Accessibility

The Convention Center is handicap accessible. If you have special needs or requirements, please contact Conference Management at cmasia@siggraph.org.

Age Requirement Policies

Registered attendees under the age of 16 must be accompanied by an adult at all times. Children under 16 are not permitted in the Exhibition. Age verification is required.

Automated Teller Machines (ATMs) and Banks Currency Exchange

ATM

An Automated Teller Machine (ATM) is located at Daily Yamazaki, Level 1 of Exhibition Hall (nearer to Hall A). Daily Yamazaki is open 07:00–23:00.

BANK

Citibank Yokohama
Yokohama Station West Exit
Tel: +81 45 314 0716
*ATM is available 24 hours

FOREIGN EXCHANGE

World Currency Shop
(Bank of Tokyo-Mitsubishi UFJ)
Yokohama Sogo B2F
Tel: +81 45 451 9600
10:00–19:00

Foreign Currency Exchange Plaza
of Bank of Yokohama
Yokohama Station East Exit
Tel: +81 45 453 6824
11:00–13:30
14:30–18:30

Travelex Currency Shop
Yokohama Station West Exit
The Diamond Yokohama Underground Shopping Mall
Tel: +81 45 316 6200
10:00–21:00

Bookstore

Level 3–Foyer, Conference Center

BreakPoint Books offers the latest and greatest books, CDs, and DVDs on computer animation, graphic design, gaming, 3D graphics, modeling, and digital artistry. The bookstore features recent books by SIGGRAPH speakers and award winners.

Note: Bookstore refunds will only be processed during the conference. All bookstore policies are those of BreakPoint Books and not SIGGRAPH Asia 2009.

Cafeteria/Restaurants/Stand Catering

A variety of coffee shops, snack bars and restaurants are available in Pacifico Yokohama.

Pacifico Yokohama Restaurant Meal Ticket can be purchased at Pacifico Yokohama Business Center.

Child Care

Child care will not be provided at SIGGRAPH Asia 2009. Contact your hotel concierge for suggestions.

Conference Management Office

Room 311/312, Level 3 Conference Center

If you have questions regarding SIGGRAPH Asia 2009, you can always approach the student volunteers. Feel free to stop by the conference management office too.

Exhibition Management Office

Room BM 2, Mezzanine Floor of Exhibition Hall B

Exhibition Management representatives are available during conference hours to meet with exhibitors and help with plans for exhibiting at SIGGRAPH Asia 2009 and SIGGRAPH Asia 2010.

Housing Desk

Level 2–Foyer, Conference Center

Complete information about SIGGRAPH Asia 2009 hotel accommodations and tours. Open during registration hours.

ACM SIGGRAPH International Resource Center

Level 2–Foyer, Conference Center

This center offers information on ACM SIGGRAPH global initiatives including Chapters, Education, Membership, and International Resources. A multi-lingual staff answers questions, offer suggestions, provides informal translation services, and makes connections with international attendees.

Lost and Found

Exhibition Management Office, Room BM 2, Mezzanine Floor of Exhibition Hall B

To inquire about lost items during and after the conference, please proceed to the Exhibition Management Office.

All lost items (including badges) should be turned into this location, where they will be logged and stored until the conclusion of the conference. After the conference, all lost and found items will be turned over to the security office of Pacifico Yokohama Convention Center.

Merchandise Pickup Center/ SIGGRAPH Asia Store

Level 3–Lounge, Conference Center

Your conference documentation (included with registration) must be picked up at the Merchandise Pickup Center. Conference documentation and pre-purchased merchandise will not be shipped, nor will refunds be given for any material that is not picked up at the Merchandise Pickup Center. Open during registration hours. See Registration.

Parking

MINATO MIRAI PUBLIC PARKING LOT

STANDARD-SIZED CARS

Fee: ¥260/30min; ¥520/hour

* 50% discount for parking from 00:00 to 06:00
* Weekdays: Maximum charge of ¥1,300 from 07:00 to 23:00

Hours: Opens 24 hours a day

Capacity: 1,188 cars

Contact: +81 45 221 1301

MOTORCYCLES

Fee: ¥100 / hour; Maximum ¥800/day

Hours: 24 hours a day
(Entrance only from Exhibition Hall)

Capacity: 44 (126 cc engine or higher)

Contact: +81 45 221 1301

RINKO PARK PARKING LOT

Fee: ¥250/30min

* Weekdays : Maximum charge of ¥1,100 from 08:00 to 21:00

Hours: 08:00 to 21:00

Capacity: 100 cars

Car size: Max 5.3mL x 2mH x 1.7ton Weight

Contact: +81 45 221 2175 (10:00 to 21:00)

Registration

Outside Exhibition Hall B, Level 1

Tuesday, 15 December	15:00–19:00
Wednesday, 16 December	08:00–18:00
Thursday, 17 December	08:00–18:00
Friday, 18 December	08:00–18:00
Saturday, 19 December	08:00–16:30

Speaker Preparation Room

Room 211/212, Conference Center

Tuesday, 15 December	13:00–18:00
Wednesday, 16 December	08:00–18:00
Thursday, 17 December	08:00–18:00
Friday, 18 December	08:00–18:00
Saturday, 19 December	08:00–16:00

Please pick up your badge, registration credentials, and conference information at the registration counter outside Exhibition Hall B, Level 1 before proceeding to the Speaker Prep Room on Level 2, where you will collect your Speaker Ribbons.

If you are presenting at the conference, you should check in with Speaker Prep at least 24 hours before your session to review your materials, practice your presentations, and test the playback of your animations. It's the best place to make sure that you will have everything you need for your session.

Technical Materials

Technical materials included with your registration must be picked up at the SIGGRAPH Asia 2009 Merchandise Pickup Center. Lost merchandise vouchers will not be replaced.

Technical Materials Sold After the Conference

FULL CONFERENCE DVD-ROM

This digital publication contains the electronic version of the Technical Papers, including images and supplemental material; the Course Notes, including supplemental materials (movies, source code, HTML presentations); and abstracts and supplemental materials from both the Educators Program and Sketches & Posters.

The content of the printed version of the *ACM Transactions on Graphics* (Conference Proceedings Special Issue) and the Digital Experiences: the SIGGRAPH ASIA 2009 Art Gallery, Emerging Technologies, and Computer Animation Festival Catalog is also included on the Full Conference DVD-ROM. The DVD-ROM is included with all Full Conference Access registrations, and it is available for purchase at SIGGRAPH Asia 2009.

ACM TRANSACTIONS ON GRAPHICS

The printed *ACM Transactions on Graphics* (Conference Proceedings Special Issue) contains the Technical Papers. It is available for purchase at SIGGRAPH Asia 2009.

DIGITAL EXPERIENCES: SIGGRAPH ASIA 2009 ART GALLERY, EMERGING TECHNOLOGIES, AND COMPUTER ANIMATION FESTIVAL CATALOG

Includes the permanent record of images from the Art Gallery, the Computer Animation Festival, and Emerging Technologies. They are available for purchase at SIGGRAPH Asia 2009.

Siggraph Asia 2009 Video Review

Contains animations presented at the SIGGRAPH Asia 2009 Computer Animation Festival.

To order these materials after the conference, contact:

ACM MEMBER SERVICES
+1.212.626.0500 (International and New York Metro Area)
800.342.6626 (Continental US and Canada)
+1.212.944.1318 fax
orders@acm.org

Wireless Internet Access

SIGGRAPH Asia 2009 provides 802.11 a/b/g wireless network access in most areas of the Convention Center.
To use the wireless network, attendees should have their own wireless (802.11a, b or g compatible) cards.

Please refer to your laptop operation system and client adapter documentation and follow this procedure:

1. Document all existing TCP/IP and wireless configuration information before you make any changes.
2. Configure your laptop to use DHCP
3. Configure your wireless adapter Network Name (SSID) to be “SA2009”
4. Disable encryption on your wireless adapter

The SIGGRAPH Asia 2009 wireless network provides open, unencrypted communications for conference attendees. The system is not secure and can be monitored by others.

SIGGRAPH Asia 2009 does not provide public work-stations for internet access.

ジェネラルインフォメーション

Merchandise(カンファレンスグッズ・DVD・刊行物)引換・購入

参加登録に含まれるカンファレンスグッズ、刊行物は全て、会議センター3Fラウンジの"Merchandise"カウンターにてお引き換え下さい。こちらで販売もしております。

シーグラフアジア2009カンファレンスの刊行物、および会場内ショップでバウチャーと交換されるカンファレンスグッズの発送は致しかねます。また商品をカウンターで引き取り忘れられた場合の返金も致しかねます。

ブックストア「BreakPoint Books」

会議センター3階にあります。

コンピュータアニメーション、グラフィックデザイン、ゲーミング、3Dグラフィック、モデリング、デジタルアート等の英語・日本語両方の本を初め、CD、DVDがご購入可能です。

www.breakpointbooks.com

チャイルドケア

シーグラフアジア 2009はベビーシッターやチャイルドケアの施設はご用意しておりません。

バリアフリー

全施設に車イスの方がご利用いただけるエレベーター、スロープ、トイレ、座席スペース、自動販売機、駐車スペースを完備しております。

詳細:
www.pacifico.co.jp/visitor/info/index.html

ショップ&レストラン情報

パシフィコ横浜内:
www.pacifico.co.jp/visitor/shops/index.html

みなとみらい21地区:
www.minatomirai21.com

会場内でのケータリングにつきましては、神奈川クッキングサービスセンター、suda@kanagawa-cooking.co.jp までお問い合わせ下さい。

みなとみらい21共通飲食券はパシフィコ横浜ビジネスセンター(展示ホール2Fコンコース内)にてお求めいただけますwww.pacifico.co.jp/promoter/support/sp06.html

トラベルインフォメーション

ホテルリスト等につきましては
www.siggraph.org/asia2009/travel_housing/ をご覧下さい。

お問い合わせ先:
ＪＴＢ西日本 ＥＣ営業部 プロモーションチーム
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お知らせ(カンファレンスポリシー)

シーグラフアジア2009では、写真撮影および録音は禁じられています。無断で写真撮影をされた場合には参加取消し等の処置を取らせて頂く場合もあります。シーグラフ2009はカンファレンス専属カメラマンを擁し、将来のACM SIGGRAPHイベント公式の場、およびプロモーションに、当専属カメラマンが撮影した全写真を使用する権利を有します。

年齢確認のため身分証明書の提示を求める場合もございます。また、参加登録済の16歳未満の方の単独での入場はお断りしています。常に大人が同行する必要があります。

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駐車場のご案内

みなとみらい公共駐車場

普通車
料金: 30分260円、1時間520円
深夜割引: 午前0時～6時は半額
平日割引: 午前7時～午後11時は最大1,300円
営業時間: 24時間(無休)
収容台数: 1188台
普通車(車長6.0m、車高2.1m、重量4.0t以下まで)
お問い合わせ: 駐車場管理事務所
TEL 045-221-1301
※10月1日より「みなとみらい公共駐車場」は場内禁煙となります。

自動二輪車
料金: 1時間100円、1日最大800円
定期: 1ヶ月16,000円
営業時間: 24時間
※入庫時は展示ホール側出入り口のみ
収容台数: 44台(126ｃｃ以上)
お問い合わせ: 駐車場管理事務所
TEL 045-221-1301

バス・大型車 駐車場
料金: 30分500円、1時間1,000円
深夜割引: 午後10時～午前7時は半額
営業時間: 24時間 (無休)
入出庫は、午前7時から午後10時まで
収容台数: 40台(大型車)
お問い合わせ: 駐車場管理事務所
TEL 045-221-1302 (10:00～21:00)
＊ご利用の際は予約が必要です

臨港パーク駐車場

料金: 30分250円
平日割引: 午前8時～午後9時は最大1100円
営業時間: 午前8時～午後9時
収容台数: 100台
普通車(車長5.3m、車高2.0m、重量1.7t以下まで)
お問い合わせ: 駐車場管理事務所
TEL 045-221-2175 (10:00～21:00)

Featured Speakers

Thursday, 17 December
11:00–12:30 | Level 1, Main Hall

2009年12月17日(木)
11:00–12:30 | 会議センター1Fメインホール

David Kirk
NVIDIA Fellow and former
NVIDIA Chief Scientist

NVIDIA特別研究員

デイビッド・B・カーク

The Power of Heterogeneous Computing

Modern GPUs are revolutionizing scientific visualization, visual effects, and many other applications in computer graphics. They are accelerating routine processes and revealing new possibilities that were only futuristic speculation a few years ago. Traditional graphics processors were special-purpose, hard-wired devices that supported a limited range of graphics applications. Now they are obsolete, replaced by fully programmable, massively parallel, floating-point processors that accelerate many applications by two orders of magnitude or more.

In this featured talk, David Kirk reviews the evolution of GPU technology and shares his vision of how current work in academic and industrial labs around the world will be applied to future generations of computer graphics systems.

David Kirk is an NVIDIA Fellow and served from 1997 to 2009 as NVIDIA's chief scientist, a role in which he led development of graphics technology for today's most popular consumer-entertainment platforms.

In 2009, he received the California Institute of Technology's Distinguished Alumni Award, its highest honor, for his work in the graphics-technology industry. He was elected in 2006 to the National Academy of Engineering for his role in bringing high-performance graphics to personal computers. In 2002, he received the ACM SIGGRAPH Computer Graphics Achievement Award for his role in bringing high-performance computer graphics systems to the mass market.

ヘテロジーニアス・コンピューティングの効果

近代GPUの登場により、科学技術の可視化、ビジュアルエフェクトを始め、その他多くのCGアプリケーションが進化しました。最新のGPUは、数年前までは、まだまだ先の話と捉えられていた事を実現可能とし、さらに通常の工程を大幅に短縮します。

従来のグラフィックスプロセッサは、特別な用途に限定されたグラフィックスアプリケーションのみをサポートするデバイスでした。もはやその概念は時代遅れとなり、プログラマブルな、超並列型、浮動小数点プロセッサが登場し、多くのアプリケーションが大幅に加速しました。

この基調講演では、GPUテクノロジの進化について触れ、世界中の学業界および産業界の現在の取り組みの次世代コンピュータグラフィックスシステムへの適用について、David Kirk氏の観点をご紹介します。

講演者プロフィール:
デイビッド・カークはNVIDIAの特別研究員であり、1997年から2009年まで主席研究員を務めました。この役職においては、現在最も一般的な市販エンターテインメント向けプラットフォームのためのグラフィック技術の開発を主導しました。

彼は、グラフィックス技術業界への功績に対して、2009年にCalifornia Institute of Technology (Cal Tech:カリフォルニア工科大学)より最高の名誉であるDistinguished Alumni Award(優秀同窓生賞)を授与しています。パーソナルコンピュータに高性能グラフィック スをもたらした功績により、2006年にNational Academy of Engineering (NAE:アメリカ工学アカデミー)に選出されました。2002年には高性能グラフィックスを大衆市場で可能にした功績により、SIGGRAPH Computer Graphics Achievement Award(コンピュータグラフィック功績賞)を受賞しました。

NVIDIA入社前は、1993年から1996年にかけて、テレビゲームメーカーであるCrystal Dynamicsのチーフサイエンティストおよび技術部長を務めました。1989年から1991年には、HPのApollo Systems部門の技術者でした。

彼は、グラフィックデザイン関連の50特許(出願特許を含む)の発明者であり、グラフィック技術についての50以上の論文を発表しています。マサチューセッツ工 科大学で機械工学の学士号および修士号、カルフォルニア工科大学でコンピュータサイエンスの修士号および博士号を取得しています。

Featured Speakers

Friday, 18 December
14:15–15:45 | Level 1, Main Hall

2009年12月18日(金)
14:15–15:45 | 会議センター1Fメインホール

Jun Rekimoto
Interfaculty Initiative in Information Studies
The University of Tokyo

Director, Interaction Laboratory
Sony Computer Science Laboratories

東京大学大学院情報学環教授
ソニーコンピュータサイエンス研究所
インタラクションラボラトリー室長
暦本純一氏

Enhanced Realities

As the wave of ubiquitous computing rapidly penetrates into our everyday lives, the focus of human-computer interactions is also shifting from simply improving individual devices to enhancing more connected activities and communications.

In this talk, Jun Rekimoto, discusses how such pervasive connectivity based on advanced sensing technologies, and large-scale fusion of real and digital worlds, will change our physical space and what the user-interface challenges will be.

Jun Rekimoto's research interests include human-computer interaction and computer-augmented environments. He invented various innovative interactive systems and sensing technologies, including NaviCam (a hand-held augmented-reality system), Pick-and-Drop (a direct-manipulation technique for inter-appliance computing), CyberCode (the world's first marker-based augmented-reality system), Augmented Surfaces, HoloWall, and SmartSkin (two of the earliest examples of multi-touch systems).

He has published more than 100 articles in the area of human-computer interactions, including ACM SIGCHI, and UIST. He received the Multi-Media Grand Prix Technology Award from the Multi-Media Content Association Japan in 1998, the iF Interaction Award in 2000, the Japan Inter-Design Award in 2003, and the iF Communication Design Award in 2005. In 2007, he was elected to the ACM SIGCHI Academy.

エンハンスド・リアリティー

ユビキタスコンピューティングが急速に日常生活に取り込まれて行くと同時に、ヒューマンコンピュータインタラクションの課題も単にそれぞれの機器の使いよさを向上させるだけでなく、より密接に結合したそれらの機器と人間が作り出す全体像に移行してきています。この講演では種々の先進的センシング技術によるインタラクションや、大規模な物理世界と情報世界の融合をテーマに、ユーザインタフェースのチャレンジについて議論します。

講演者プロフィール:
ヒューマンコンピュータインタラクション全般、ユビキタスコンピューティングが主な研究分野、NaviCam(ハンドヘルドの拡張現実ARシステム)、Pick-and-Drop (複数コンピュータ環境向けインタフェース)、CyberCode(拡張現実感ARアプリケーションを構築するための世界初ビジュアルマーカーを用いた画像認識技術)、Augmented Surfaces (情報シェアテーブル等に発展する物体を会した情報シェア技術)、HoloWall(壁面型インタフェースの新しい構成手法)、SmartSkin(非接触・多点・自由形状入力センサーとその対話技法)をはじめ、多数の革新的、センシング技術、インタラクティブシステムを発明。

ヒューマンコンピュータインタラクション分野でACM SIGCHI、UIST(User Interface Software and Technology)などに100以上の記事・論文を発表。1998年MMCAマルチメディアグランプリ技術賞受賞、2000年 International Forum Design「iF」Interaction賞受賞、2003年日本文化デザイン賞受賞、2005年iF Communication Design賞受賞、2007年 ACM SIGCHI Academy 受賞。

Featured Speakers

Saturday, 19 December
14:15–15:45 | Level 1, Main Hall

2009年12月19日(土)
14:15–15:45 | 会議センター1Fメインホール

Joe Rohde
Senior Vice President,
Creative,
Walt Disney Imagineering

ウォルト・ディズニー・
イマジニアリング
エグゼクティブ・デザイナー
シニア・バイス・プレジデント
Joe Rohde (ジョー・ローディ)

Story Structure and the Design of Narrative Environments

Joe Rohde discusses the use of narrative structure as a guideline for conceptualization and design of physical and virtual spaces. The rules of storytelling are well understood when applied to traditional linear forms derived from literature, but spatial environments pose challenges that require special treatment. The principles that inform storytelling in built physical space can apply as well to virtual space. Ths featured talk covers some guidelines and principles for creating spaces that serve both the initial needs of the primary designer or storyteller and the needs of future audiences, who may seek to re-adapt the narrative to their own purposes.

Joe Rohde is an Executive Designer and Senior Vice President at Walt Disney Imagineering. He is the creative lead for Disney's Animal Kingdom at the Walt Disney World Resort in Orlando, Florida, and related new projects. He has led conceptualization, design, and production for Disney's Animal Kingdom since its inception in 1990. He also oversees creative development at Disney's newest luxury resort project in Hawaii, which is scheduled to open in 2011.

He also led development and production of Expedition Everest at Disney's Animal Kingdom. This project took him and other Imagineers to the mountains of Nepal, Bhutan, and Tibetan Sichuan, researching the background details to incorporate into the very authentic environment designed for Expedition Everest. His travels for the research and production work were featured in a series of hour-long programs on the Discovery Network.

He began his career at Walt Disney Imagineering as a model designer and scenic painter in 1980, working on the México pavilion for Epcot at Walt Disney World Resort. He also worked on numerous attractions for the redesigned Fantasyland at Disneyland in the 1980s, Captain EO, and the Norway pavilion for Epcot, before commencing his responsibilities on Disney's Animal Kingdom.

物語的構造と物語を語る環境のデザイン

本講演では、実空間と仮想空間のコンセプト化とデザインをする上での指針として物語的構造をどう活用するかを解説します。文学に由来する従来の線状(リニア)の形式で使う話術の手法は深く理解されているものの、空間を対象とした環境にはそれ固有の難しさがあり特別な処理が必要となります。建造された物理空間の物語性を形成する手法は、仮想空間にも当てはまります。講演ではプロジェクト初期に関わるデザイナーや物語立案者に求められる初期段階のニーズと、聴衆が物語を自分たちの目的に適応させることへのニーズの双方を満たす、空間をデザインするための指針や原則を紹介します。

講演者プロフィール:
ローディ氏はウォルト・ディズニー・イマジニアリングのエグゼクティブ・デザイナー、シニア・バイス・プレジデントとしてフロリダ州オーランドのウォルト・ディズニー・ワールド・リゾートのディズニー・アニマル・キングダムと関連する新規プロジェクトのクリエイティブ責任者を務める。1990年に検討が始まったディズニー・アニマル・キングダムのコンセプト化、デザイン、製作を統括してきた。またディズニーがハワイで進めている2011年開業予定の新ラグジュアリ・リゾートホテル事業のクリエイティブ開発も監督している。

ディズニー・アニマル・キングダムにあるエクスペディション・エベレストの開発と製作を統括したローディ氏は自身が率いるイマジニアの一行とともにネパール、ブータン、チベット領四川の山地を訪れ、エクスペディション・エベレストの為にデザインした本物に限りなく近い環境作りに取り入れる背景詳細の研究を行った。その研究目的の視察旅行と製作の仕事ぶりはディスカバリー・ネットワークの一時間番組のシリーズとして放送された。
ローディ氏のウォルト・ディズニー・イマジニアリングにおけるキャリアは1980年、ウォルト・ディズニー・ワールド・リゾートのエプコットにあるメキシコ館のモデル・デザイナーとシーニック・ペインターの仕事から始まった 1980年代にディズニーランドのファンタジーランドのデザインを一新する事業ではいくつものアトラクションに関わり、キャプテンEO、エプコットのノルウェイ館を手がけたのちにディズニー・アニマル・キングダムの業務に就いた。

CONFERENCE REGISTRATION CATEGORIES
- ■ Full Conference Access
- ● One-Day Full Conference
- ▲ Basic Conference

Programs

Art Gallery

アートギャラリー:「適応」

■ ● ▲

Some of the most impressive breakthroughs in art and technology happen by considering the gaps and opportunities in the existing landscape - by adapting what we know to what might be. Now, as the world evolves with exponential speed, we need artists and scientists to show us the way.

The Art Gallery and Emerging Technologies exhibitions at SIGGRAPH Asia 2009 share the theme of Adaptation. The Art Gallery features a diverse, international body of work, ranging from pieces driven by technology to works that critically comment on our technological society.

現実の社会に存在する課題とそれに取り込む機会について考える―今存在するものを将来存在するかもしれないものに適応させることにおいて、アートとテクノロジーの飛躍的な成果が見られます。

世界が急速に進化する今、アーチストや研究者にその最前線を見せてもらいましょう。シーグラフアジア2009のアートギャラリーとエマージングテクノロジーの展示は「適応」をテーマとしています。アートギャラリーでは、最先端のデジタルメディア技術を駆使した作品から、技術社会に疑問を投げかけるような作品まで、多様で国際的なアートが展示されます。

Computer Animation Festival

コンピュータアニメーションフェスティバル

The premier annual event for the world's most innovative, accomplished, and amazing digital film and video creators. An internationally recognized jury receives hundreds of submissions and presents the best work of the year in daily Animation Theaters and the Electronic Theater. Selections include outstanding achievements in time-based art, scientific visualization, visual effects, real-time graphics, and narrative shorts.

世界で最も革新的、完成度が高く驚異的なデジタル映画及びビデオクリエイターのための年１度の特別イベントです。国際的に認められた審査員が何百もの投稿作品を受理・審査後、会期中、アニメーションシアターと、特に優れた作品を集めた上映会であるエレクトロニックシアターにて毎日世界最高の作品をご観賞いただけます。選び抜かれた作品には、タイムベース・アート、サイエンティフィック・ビジュアライゼーション、ビジュアルエフェクト、リアルタイム画像、ナラティブな短編映画等が含まれます。

Electronic Theater エレクトロニックシアター ■ ●

The Electronic Theater presents a two-hour overview of the best animations, visual effects, and scientific visualizations produced in the last year. After reviewing hundreds of submissions from around the world, an international jury assembled this show to represent the must-see works in computer graphics for 2009. The Electronic Theater also includes a few pieces shown by special invitation.

On opening night, 17 December, the Electronic Theater begins with presentation of the Computer Animation Festival's Best of Show and Best Technical Awards.

エレクトロニックシアターでは、前年度制作されたアニメーション、ビジュアルエフェクト、サイエンスビジュアライゼーションなどの選び抜かれた作品を２時間で上映致します。全世界から寄せられた数百にも上る応募作品の中から、国内外から集まった審査員により、2009年度のCG界で必見の作品がこのプログラム上映に選ばれました。エレクトロニックシアターでは、特別招待作品の上映も致します。上映初日である12月17日はBest of Showと Best Technical Awardのプレゼンテーションから始まります。

Animation Theater アニメーションシアター ■ ● ▲

A more in-depth look at the world of animation, visual effects, and scientific visualization over the last year. In the Animation Theater, all-day shows present outstanding works from around the world selected by the Computer Animation Festival's international jury.

前年度中に作成されたアニメーション、ビジュアルエフェクト、サイエンスビジュアライゼーションなどのより深い部分を知る事が出来ます。アニメーションシアターでは、国内外の審査員により選ばれた世界中の優れた作品が一日を通して上映されます。

Mascot Animations マスコットアニメーション

The Computer Animation Festival issued a special call for short animations of SIGGRAPH 2009's robot mascot character. Students and professionals around the world submitted many creative, entertaining animations. The largest group of submissions came from students at the Digital Hollywood school in Tokyo.

The best robot mascot animations were selected for title cards and trailers in the Animation Theater, the Electronic Theater, and the SIGGRAPH Video Review.

コンピューターアニメーションフェスティバルでは、シーグラフアジアのマスコットであるロボットを使用したショートアニメーションの特別公募を致しました。世界中の学生や、プロによりたくさんの独創的で、面白いアニメーションが寄せられました。東京にある、デジタルハリウッド学校の学生より一番多くの応募作品を頂きました。彼らの作品は、タイトルカード、アニメーションシアターとエレクトロニックシアターの予告編、そして、シーグラフのビデオレビュー内で使用されています。

CONFERENCE REGISTRATION CATEGORIES
- Full Conference Access
- One-Day Full Conference
- Basic Conference

Programs

Courses
コース

For over 30 years, the SIGGRAPH Courses Program has been sharing the very best of computer graphics and interactive techniques with the graphics community. International experts present instructional sessions for beginners, novices, or experts on topics such as animation production, computer-human interaction, gaming, rendering techniques, computational geometry, mobile devices, and more. At SIGGRAPH Asia 2009, hundreds of practitioners, developers, researchers, artists, and students will attend Courses to broaden and deepen their knowledge of their field, and to learn the secrets of new fields. Join them!

30年以上に渡り、シーグラフのコースプログラムは、コンピュータグラフィックス及びインタラクティブ技術の最前線の成果をわかりやすく解説してきました。このプログラムでは、国際的な専門家による、初級から上級向けのチュートリアルを開講します。アニメーション制作、ヒューマンインタラクション、ゲーミング、レンダリング技術、計算幾何学、モバイルデバイス等、様々な分野のチュートリアルを受講できますシーグラフアジア2009では、何百人もの業界人、開発者、研究者、アーチスト、学生が"コース"プログラムに参加し、各自の分野の知識を広め、また深め、最新の研究分野の知識を習得できます。

Educators Program
エデュケーターズプログラム

In the Educators Program, people from all levels and disciplines, from within academia and industry, share their research, methods, and opinions about the teaching and integration of computer graphics and interactive techniques into all areas of learning. SIGGRAPH Asia 2009 sees education as a natural part of the lifelong learning process and supports the evolving integration of art and technology embraced by educators.

エデュケーターズプログラムは、学術界と産業界のさまざまな立場の専門家がコンピュータグラフィックスとインタラクティブ技術に関する教育や、それらを活用する教育の設計・開発・運用・管理・評価に関する理論や実践を発表し、意見交換や情報共有をする場です。

対象領域は、映像制作・アニメーション制作・ゲーム制作・Webデザイン・グラフィックデザイン・インダストリアルデザイン・建築デザイン・ファッションデザイン・インタラクティブアート・医療画像処理・ビジュアルコンピューティング・数学等さまざまです。

大学や専門学校をはじめとする学校教育から、企業やプロダクションにおける教育や、eラーニング等のさまざまな形態の教育が対象となり、論文発表やパネルセッション、ワークショップとして行われます。学術界と産業界で教育に携わる多くの皆様の参加をお待ちしております。

Emerging Technologies
エマージングテクノロジー「適応」

Some of the most impressive breakthroughs in art and technology happen by considering the gaps and opportunities in the existing landscape - by adapting what we know to what might be. Now, as the world evolves with exponential speed, we need artists and scientists to show us the way.

The Emerging Technologies and Art Gallery exhibitions at SIGGRAPH Asia 2009 share the theme of Adaptation. In Emerging Technologies, attendees experience works that show how computer graphics and interactive techniques are evolving to adapt to new technical, social, and environmental conditions.

現実の社会に存在する課題とそれに取り込む機会について考える―今存在するものを将来存在するかもしれないものに適応させることにおいて、アートとテクノロジーの飛躍的な成果が見られます。世界が急速に進化する今、アーチストや研究者にその最前線を見せてもらいましょう。

シーグラフアジア2009のアートギャラリーとエマージングテクノロジーの展示は「適応」をテーマとしています。エマージングテクノロジーへの参加者は、最先端のデジタルメディア技術を駆使して、社会環境 に適応するためにどのように進化しているのかを 体験することができます。

Sketches
スケッチ

Short illustrated talks on computer graphics and interactive techniques in art, cinema, advertising, design, science, and engineering. Following their talks, sketch presenters answer questions and discuss future implications of their work.

スケッチでは、アートやデザイン、アニメーション制作から映画、CM、ゲーム、Webデザイン等の産業応用まで、コンピュータグラフィックスとインタラクティブ技術に関する様々なフェーズにおける斬新なアイデアやノウハウを紹介しています。完成度の高さより、ユニークさと面白さを尊重しています。約15分の講演とそれに続く質疑を通して、講演者との意見交換の場にして下さい。

Posters
ポスター

Graphic displays of incremental, preliminary, partial, and innovative insights that are important but not fully developed. Posters are displayed throughout the conference week, and presenters discuss their work in scheduled sessions.

ポスターでは、コンピュータグラフィックスとインタラクティブ技術に関するアイデアで、まだ初期段階のもの、部分的なもの、あるいは未完成でも斬新なもの、を紹介しています。ポスターは会期中を通して展示され、ポスター発表者によるプレゼンテーションの時間も設けられます。

CONFERENCE REGISTRATION CATEGORIES
- Full Conference Access
- One-Day Full Conference
- Basic Conference

Programs

Technical Papers

テクニカルペーパー

The SIGGRAPH Asia 2009 Technical Papers program is a premier international forum for presenting new research in computer graphics and interactive techniques. Leading international experts from Asia and beyond present peer-reviewed research in physical simulation, animation control, real-time and photo-realistic rendering, geometric and urban modeling, hair capture and styling, texturing, image and video processing and resizing, GPU algorithms, and sound. One session of four papers includes duplicate presentations in Japanese.

シーグラフとシーグラフアジア2009はコンピュータグラフィクス及びインタラクティブ技術の発表の場として最も権威ある国際会議です。

近年の注目の話題にはアニメーション制御、フォトリアリスティックレンダリングとノンフォトリアリスティックレンダリング、映像処理、GPUアルゴリズム、コンピュテーショナルフォトグラフィ、スケッチベースドモデリングサウンド、ハプティクスが挙げられます。

是非今年12月横浜にてシーグラフアジアに参加される計画を立てられ、研究・産業分野の専門家による最新成果についての様々な議論を聞きましょう。

Technical Papers Fast Forward Session

テクニカルペーパーファーストフォーワードセッション

Get a preview of the latest research in computer graphics and interactive techniques and select the Technical Papers sessions that you need to attend later in the week.

コンピュータグラフィックスとインタラクティブ技術の最新研究成果のプレビュー（予告編）です。これらをご覧になり、会期中参加されるテクニカルペーパーセッション選択のためのご参考にしてください。

Simultaneous Interpretation Offer

The following sessions will be translated simultaneously:

Featured Speakers

Presented in English, Translated to Japanese:

– David Kirk: The Power of Heterogeneous Computing

– Jun Rekimoto: Enhanced Realities

– Joe Rohde: Story Structure and the Design of Narrative Environments

Special Sessions

Presented in English, Translated to Japanese:

– “Astro Boy”: Updating a 2D Icon to Modern CG

– The Production of “Astro Boy”: Asset Creation and Cloud FX

Special Sessions

Presented in Japanese, Translated to English:

– Encountering the Cutting Edge of Japanese Video Game Development
– Ring of Gundam: No Hints for Creation in Your Manuals

SIGGRAPH Asia will provide attendees with a receiver and headset to enjoy the simultaneous interpretation. The devices are given out on a first come first served basis and can be obtained from a counter in front of the session room 45 minutes before the session begins. Attendees need to deposit their registration badge in order to obtain the receiver and headset. The translation devices need to be returned immediately after leaving the session room.

SIGGRAPH Asia will charge attendees for lost registration devices.

プログラムガイド

日本語セッション一覧

CONFERENCE REGISTRATION CATEGORIES
- ■ Full Conference Access
- ● One-Day Full Conference
- ▲ Basic Conference

■● 基調講演

※全部英→日同時通訳付

場所：全て会議センター1F メインホール

ヘテロジーニアス・コンピューティングの効果

12月17日(木) 11:00–12:30

NVIDIA特別研究員
David Kirk（デイビッド・B・カーク）

エンハンスド・リアリティー

12月18日(金) 14:15–15:45

東京大学大学院情報学環教授
ソニーコンピュータサイエンス研究所
インタラクションラボラトリー室長
暦本純一氏

物語的構造と物語を語る環境のデザイン

12月19日(土) 14:15–15:45

ウォルト・ディズニー・イマジニアリング エグゼクティブ・デザイナー
シニア・バイス・プレジデント
Joe Rohde (ジョー・ローディ)

■●▲ スペシャルセッション

日本のビデオゲーム開発の現場では今何が起きているか？

※日→英同時通訳付

12月17日(木) 14:15–15:45 1F メインホール

1. 日本のビデオゲーム業界の動向と技術開発への取組み

コーエーテクモホールディングス代表取締役社長/
CESA副会長、技術委員会委員長
松原健二

2. ビデオゲームは、CG研究のフロンティアたり得るか？

スクウェア・エニックス 研究開発部
チーフ・テクノロジスト
吉岡 直人

3. 新しい映像表現を求めて

バンダイナムコゲームスコンテンツ制作本部
制作ディビジョン技術部、サウンド部
ゼネ ラルマネージャー
斎藤直宏

コナミデジタルエンタテインメントスタジオITセンター
技術サポートグループ
統括マネージャー
植原一充

リング・オブ・ガンダム-マニュアルに創作のヒントはない

※日→英同時通訳付

12月18日(金)16:15–18:00 1F メインホール

総監督
富野由悠季

株式会社ROBOT
CGスーパーバイザー
西井育生

「アトム」2次元で表現された人気キャラクターから最新CGへ進化

※英→日同時通訳付

12月19日(土)11:00–11:45 1F メインホール

Tim Cheung
IMAGI Studios

「アトム」のプロダクション：アセット開発と雲シーンのエフェクトについて

※英→日同時通訳付

12月19日(土)12:00–12:45 1F メインホール

Wai kit Wan
Don Wong
IMAGI Studios

プログラムガイド

日本語セッション一覧

CONFERENCE REGISTRATION CATEGORIES
- ■ Full Conference Access
- ● One-Day Full Conference
- ▲ Basic Conference

■ ● ▲ アートギャラリー

場所:展示ホールA

<開催時間>
12月17日(木)9:30–18:30
12月18日(金)9:30–18:30
12月19日(土)9:30–17:00
※ Room411/412で実施される「パフォーマンス」の詳細につきましては、英語ページをご覧下さい。

コンピュータアニメーションフェスティバル

■ ● エレクトロニックシアター

場所:1F メインホール

<上映時間>
12月17日(木)19:00–21:00
12月18日(金)19:00–21:00
12月19日(土)16:15–18:15と19:00 –21:00

■ ● ▲ アニメーションシアター

場所:Room 419

<上映時間>
12月17日(木)9:00 – 18:00
12月18日(金)9:00 – 18:00
12月19日(土)9:00 – 18:00

■ ● ▲ エマージングテクノロジー

場所:展示ホールB

12月17日(木)9:30 – 18:30
12月18日(金)9:30 – 18:30
12月19日(土)9:30 – 17:00

■ ● ▲ エマージングテクノロジー“トーク”セッション

12月19日(土)9:00 –10:45 | Room 413

■ ● エデュケーターズプログラム

—教育論文—

ゲーム

※日本語による発表、英語での同発表:同日12/17 16:15–18:00
Room414/415

場所: 12月17日(木) 9:00–10:00 | Room 416/417
セッションチェア:青木美穂

1. 産学連携によるゲーム開発の実践的教育カリキュラムの構築

東京工科大学
三上浩司、渡辺大地、伊藤彰教、川島基展、竹内亮太、近藤邦雄、金子満

株式会社プレミアムエージェンシー
山路和紀、小澤賢侍

2. An innovative game creator upbringing project in the Asian region

株式会社プレミアムエージェンシー
川島基展、山路和紀、高橋鮎美、カクカンカン、村瀬浩太

株式会社 ソニー・コンピュータエンタテインメント
金澤克彦

CGとインタラクティブ技術の教育への応用

※日本語による発表、英語での同発表:同日12/18 16:15-17:45
Room416/417

12月18日(金) 9:00–10:30 | Room 416/417
セッションチェア:近藤左千子

1. グループワークを用いたVRコンテンツ制作の教育法

北陸先端科学技術大学院大学　アイデアマラソン研究所
宮田一乗、梅本勝博、樋口健夫

2. 芸術と先端技術によるコンテンツ表現への試み —若冲が描く花と生き物たちの世界—

筑波大学図書館情報メディア研究科
金尚泰、西岡貞一

筑波大学芸術研究科博士前期過程
若杉さえ子

3. Sensory Interactionのための教育プログラム

同志社女子大学学芸学部情報メディア学科
有賀妙子、森公一

プログラムガイド

日本語セッション一覧

CONFERENCE REGISTRATION CATEGORIES
- Full Conference Access
- One-Day Full Conference
- Basic Conference

■● エデュケーターズプログラム

—ワークショップ—
※全て日英逐次通訳付

CGクリエイターのためのパントマイムワークショップ
12月17日(木) 14:15–18:00 | Room 416/417

アクトバート合同会社
荒木シゲル

ゲーム業界で生き抜くための陰の立て役者 —セガの社内トレーニング—
12月18日(金) 9:00–12:00 | Room 414/415

株式会社セガ
康日準
麓一博
築島智之

ディジタルキャラクターメイキングワークショップ
12月18日(金) 14:15–18:00 | Room 414/415

東京工科大学クリエイティブラボ
金子満

ティーチングティチャーズ:プロダクションの制作プロセスに対する理解を教育者に与えること
12月19日(土) 9:00–10:45 | Room 414/415

ルーカスフィルム・アニメーション・シンガポール
タッド・レックマン

グラフィックエンジン “MAJUA”を 活用した実践的次世代ゲームクリエイター育成
12月19日(土)14:15–18:00 | Room 414/415

株式会社プレミアムエージェンシー
川島基展
山路和紀

■● コース

テニスゲームを作ってみよう!「ゲームプログラミングひとめぐり」
※日本語のみでの講演
12月16日(水)9:00–12:45| Room 501

株式会社セガ
第二AM研究開発部プログラマ
平山尚

レンダリング用・ゲーム用キャラクターの同時制作ワークフロー
※日本語のみでの講演
12月17日(木)9:00–10:45| Room 502

id Software リードアニメーター
原慎一郎

コンピュータグラフィクスのためのスケッチインタフェース
※英語での同講演:12/18(金)
12月17日(木)9:00–10:45| 5F 小ホール

JST ERATO 五十嵐デザインインタフェースプロジェクト 総括
東京大学大学院情報理工学系研究科コンピュータ科学専攻 准教授
五十嵐 健夫

チップチューン・マーチング・バンド
※日本語・英語両方での講演
12月17日(木) 14:15–18:00 | Room 513

英国ニューカッスル大学
カルチャーラボ・デジタルメディア客員研究員
城一裕

Androidでゲームを作りましょう!
※日本語のみでの講演
12月17日(木)14:15–16:00| Room 502

日本グーグル
デベロッパーアドボケイト
プルエットクリス

iPhone アプリケーション開発概要
※日本語のみでの講演
12月17日(木)16:15–18:00| Room 502

Apple

ゲームのための実践的な剛体物理シミュレーション –安定化、高速化、および並列化について–
※日本語のみでの講演
12月19日(土) 14:15 – 16:00 | Room 511/512

プログラムガイド

日本語セッション一覧

CONFERENCE REGISTRATION CATEGORIES
- Full Conference Access
- One-Day Full Conference
- Basic Conference

■● テクニカルペーパー

※これら日本語セッションの英語版につきましては、英語版プログラムをご覧下さい。

日本語による論文発表セッション

※全て日本語のみでの発表

12月17日(木)16:15–18:00| Room 303/304

TOG ARTICLE 125

Seam CarvingとScalingを併用した最適化画像リサイズ方法

Weiming Dong
Chinese Academy of Sciences Institute of Automation

Ning Zhou
System Technologies Laboratories, Sony Corporation

Jean-Claude Paul
INRIA

Xiaopeng Zhang
Chinese Academy of Sciences Institute of Automation

TOG ARTICLE 129

反射のインタラクティブなデザイン手法

Tobias Ritschel
Makoto Okabe
Thorsten Thormählen
Max-Planck-Institut für Informatik

TOG ARTICLE 141

確率的プログレッシブフォトンマッピング

Toshiya Hachisuka
Henrik Wann Jensen
University of California, San Diego

TOG ARTICLE 148

構造情報の入力による2次元画像からの3次元形状生成

Yotam Gingold
New York University/JST ERATO

Takeo Igarashi
The University of Tokyo/JST ERATO

Denis Zorin
New York University

■● スケッチ&ポスター

※これら日本語セッションの英語版につきましては、英語版プログラムをご覧下さい。

日本語セッション1: Stimulation & Art

12月19日(土) 9:00-10:45| Room 416/417

セッションチェア:Makoto Okabe

氷塊融解の粒子ベースリアルタイムシミュレーション

Kei Iwasaki
Hideyuki Uchida
Wakayama University

Yoshinori Dobashi
Hokkaido University

Tomoyuki Nishita
The University of Tokyo

多孔質体の液体流出入による弾性変化モデリング

Hirotoshi Ashida
Yoshihiro Kuroda
Masataka Imura
Yoshiyuki Kagiyama
Osamu Oshiro
Osaka University

Vector Fluid: ベクタ形式による美しい流れ模様の生成

Ryoichi Ando
Reiji Tsuruno
Kyushu University

PHOROL: Interactive Wall Clock Art of Online Shared Snapshots

本作品は人々が撮影した写真から芸術作品を産み出す柱時計です。

Daisuke Uriu
Keio University Graduate School of Media Design

プログラムガイド

日本語セッション一覧

CONFERENCE REGISTRATION CATEGORIES
- ■ Full Conference Access
- ● One-Day Full Conference
- ▲ Basic Conference

■● スケッチ&ポスター

※これら日本語セッションの英語版につきましては、英語版プログラムをご覧下さい。

日本語セッション2: Modeling & Deformation

12月19日(土)11:00- 12:45 | Room 416/417

セッションチェア
Shigeo Takahashi

様々な形態の屋根を持つ3次元建物モデルの自動生成

Kenichi Sugihara
Gifu Keizai University

江戸の町並み復元のための木造家屋のモデリング法

Shunya Kimura
Souichiro Sunagawa
Akio Sakuma
Tomoaki Yasu
Dai Katsumura
Tomohiro Tanimura
Kaori Aoki
Satoru Takahashi
Tomoaki Moriya
Tokiichiro Takahashi
Tokyo Denki University

回転不変量を用いた関節構造を有するモデルの補間手法

Yusuke Yoshiyasu
Keio University

体積保存を導入したLSM法変形

LSM法に体積保存を導入しより妥当性の高い手法を提案する。

Kenji Takamatsu
Takashi Kanai
The University of Tokyo

日本語セッション3: Effects Okonomiyaki

12月19日(土)16:15-18:30 | Room 416/417

セッションチェア
Ryusuke Villemin

爆発シミュレーションのコントロール

Yoshinori Dobashi
Shuhei Sato
Tsuyoshi Yamamoto
Hokkaido University

Ken Anjyo
OLM Digital Inc.

Fetching Expressions -
Throwing realism into the dogs in UP

ブルドッグ・ガンマの描写において、犬の生態を理解し戯画化されたキャラクターがもたらす、コミカルながらも自然な表情を検証します。

Sonoko Konishi
Pixar Animation Studios

メイキング「9」-
カスタムツールによるパイプラインとワークフローの改良

Starz Animationのトロントスタジオにおけるツール開発とその成果。長編映画「9(ナイン)」を製作するために、パイプラインを改良することで短期間で高品質な作品を完成。特に汎用シェーダプログラムによりマテリアルおよびテクスチャ作業のワークフローを向上させ、合成ツール上でライティングを行うことでレンダリング作業までを効率化しました。

Tatsuya Nakamura
Daniel Lee
Matthew Collie
Tod Baudais
Starz Animation

背景表現のための手描き風CGアニメーション

Yosuke Katsura
Ken Anjyo
OLM Digital Inc.

CACAni システムにおけるシミュレーションベースの
中割りフレーム作成

Eiji Sugisaki
Nanyang Technological University

Masayuki Nakajima
Tokyo Institute of Technology

Hock Soon Seah
Nanyang Technological University

Fumihito Kyota
Tokyo Institute of Technology

Exhibition

HALL B ■ ● ▲ ◆

Thursday, 17 December	09:30 – 18:30
Friday, 18 December	09:30 – 18:30
Saturday, 19 December	09:30 – 17:00

CONFERENCE REGISTRATION CATEGORIES

- ■ Full Conference Access
- ● One-Day Full Conference
- ▲ Basic Conference
- ◆ Exhibits Only

Welcome to the SIGGRAPH Asia 2009 Exhibition. This is your opportunity to learn about all the products and services you need for another year of business and creative achievement. The exhibition is a diverse and energetic showcase of everything Asia and beyond have to offer in computer graphics and interactive techniques, from hardware to software companies, production studios, and government pavilions hosting the established and emerging companies that are shaping the future of digital media. Try the latest systems, talk with the people who developed them, discover companies that are looking for distributors or resellers, and get all the information you need to build your business for the next year.

Digital Bazaar

Located on the main exhibit floor, the Digital Bazaar emulates the street bazaars common in Asia. It's an open marketplace, a forum for quick, efficient, interactive exchange. Interact with startups, technoprenuers, creative producers, aspiring digital medial artists, and researchers who offering their ideas and products in the Digital Bazaar!

2D Graphics
3D Graphics
3D Modeling
3D Rapid Prototyping
Aerospace and Automotive Applications
Animation
Architecture Applications
Artificial Intelligence
Authoring Software
Broadcast Design Software
Business and Financial Graphics
CAD/CAM/CAE/CIM
Commercial Game Engines
Commercial Game Equipment
Computer-Video Interfacing
Conferences and Exhibitions
Consulting
Contract Graphics/Programming
Data Analysis
Desktop Publishing
Desktop Video Production Software
Digital Cameras
Digital Imaging
Digital Video Hardware
Digitizing Cameras
Display Technology
DVD Authoring Tools
Education/Training
Electronic Publishing
Encoders/Decoders
Encoders/Decoders-HW
Engineering Applications
Furniture
Geographic Information Systems
Geographic Information Systems-HW
Graphic Design Systems
Graphics Accelerator Boards
Graphics Accelerator Boards-HW
Graphics Standards Software
GroupWare
GroupWare Software
Haptic Input Devices
Hardcopy Devices; Photographs/Slides
HDTV
Head Mounted Displays
High Performance Graphics Processors
High Resolution Technologies
Image Based Modeling
Image Management
Industrial Design
Information Visualization
Input Devices
Interface Tools
Mapping and Cartography
Medical Imaging Software
Mobile Computing
Monitors and Displays
Motion Capture Equipment
Motion Capture Software
Multimedia Tools and Applications
Multimedia Tools and Applications-HW
Networking Equipment
Networking Infrastructure
OEM Components
Paint Systems
Printers and Plotters
Projectors
Publications
RAID Systems and Storage
Rendering and Modeling
Robotics
Scan Converters
Scanners
Scientific Application
Scientific Visualization
Simulation
Storage Devices; Tape/Disk
Streaming Technology
Systems Integrators
Terminals, Monitors and Displays
Video Effects Equipment
Video Encoding and Compression
Video Servers
Visual Effects Software
VR Software
Web 3D
Web Graphics
Workstations
Digital Cinema
Digital Content Producer
Digital Signage
Online Network Services
Visual Computing.

Job Fair

HALL B ■ ● ▲ ◆

Thursday, 17 December	09:30 – 18:30
Friday, 18 December	09:30 – 18:30
Saturday, 19 December	09:30 – 17:00

CONFERENCE REGISTRATION CATEGORIES

- ■ Full Conference Access
- ● One-Day Full Conference
- ▲ Basic Conference
- ◆ Exhibits Only

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The Job Fair, presented by CreativeHeads.net and Works Corporation Inc., is the best place for jobseekers to meet with employers from Japan and around the globe! Participating companies will be looking for the best "right brain" talent to fill a host of positions such as artists, animators, programmers, producers, game designers, tech directors, and many more!

Visit the Job Fair if you are:

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Co-Located Event

VRCAI 2009 The 8th ACM SIGGRAPH International Conference on Virtual-Reality Continuum and its Applications

14-15 December 2009
Tokyo Institute of Technology
(Yokohama, Suzukakedai Campus)

An exciting VRCAI 2009 awaits attendees from both academia and industry to Japan, a hotbed of innovation where state-of-the-art technologies and applications in the virtual-reality continuum will be explored and presented. Spanning next-generation info-communication environments such as virtual reality, augmented virtuality, augmented reality, and mixed reality, the virtual-reality continuum is key to defining and interacting, with and within, virtual worlds. Advances in research and novel applications in this field have revolutionized many of our leisure activities, making them more appealing and fun. Just as significantly, these advances provide the foundation for more effective interactivity in work- and learning-related activities.

Complete information: www.vrcai2009.com

Get Involved

SIGGRAPH Asia 2010: Get Involved

Friday, 18 December, 13:30–14:15
SIGRAPH Asia 2010 Booth, Exhibition Hall B

Would you like to be an active part of an exciting conference experience? Join the committee and get involved with SIGGRAPH Asia 2010. At this session you can meet the program chairs, get all the information you need, and say “yes” to working with the premier conference on computer graphics and interactive techniques.

Complete information is also available at the SIGGRAPH Asia 2010 booth, 17-19 December, Pacifico Yokohama Hall B.

Art Gallery: Adaptation

Exhibition Hall A

Thursday, 17 December	9:30–18:30
Friday, 18 December	9:30–18:30
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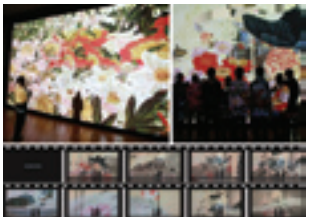
A Head of View (Invited)
Zachary Seldess
King Abdullah University of Science and Technology

A Head of View is an immersive surround audio/video sound environment in 3D game-space that can be experienced and altered in real time simultaneously by several players. The centerpiece of the installation involves a new approach to navigation through live video tracking of the players' body movements and manipulation of a miniature wireless representation of players' heads.

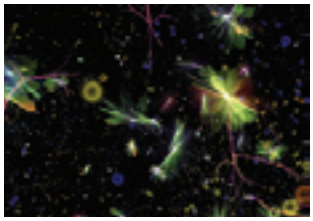
This work attempts to playfully embrace and expand upon the cognitive dissonances inherent in all multiplayer game-spaces: the ability to imagine and perceive both the space and the player's place within it from multiple aural/visual perspectives but in a non-goal-oriented, cooperatively controlled environment.

Players are invited to freely move through the space within which they are embedded. They can choose to passively explore the environment, but at any time they can also move beyond the passive role and perform various physical actions within the space (moving objects, touching walls, flying, etc.). The results of these actions, depending on their nature and relationship to the space and other players within the space, range from minute alterations of the musical texture to surprising new moments of sonic invention.



Analysis and Understanding of Paintings by Ito Jakuchu (Juried)
Sangtae Kim
University of Tsukuba

This film describes an attempt to use a high-definition digital cinema system to produce content for a next-generation image system. Paintings by Ito Jakuchu were used as prototypes to produce an immersive virtual environment that allows people to enter the paintings. The result reveals possibilities for new collaborative studies among various fields such as art, psychology, and cognitive science, and a larger-than-life display to analyze and understand cultural properties and art works.



Artificial Nature: Fluid Space (Juried)
Haru (Hyunkyung) Ji
Graham Wakefield
University of California, Santa Barbara

How does artificial-life art adapt to its environment? What is the significance of a computational ecosystem proposed as contemporary art? These are some of the ideas examined in this bio-inspired immersive art installation.

The computational world of Artificial Nature consists of organisms interacting within an environment, consuming flowing energy and matter to grow and survive, generating continuous patterns of emergent beauty. Spectators can explore this world freely and endlessly, and influence it indirectly just as they might play in a stream or forest. Sensual data collected through a camera-eye and microphone-ear, and sometimes tactile touch, become the environmental conditions to which organisms must adapt.

Artificial Nature is an infinite game. It invites you to play and create, as continuation rather than toward a termination. It actively fuses intuition, artistic expression, and personal awakening with knowledge of complex systems, thermodynamics, physical biology, and computer science. In this way, art, research, and play are integrated into one aesthetic and creative experience of infinite depth, inspiring the growth of the art work, the spectators, and the artists in a symbiotic circle.

Artificial Nature is proposed as "art-as-it-could-be", suggesting the future-possible of art through its unconventional expansion. This is a vital role of contemporary art: to conceive and create the open-ended world in which we are about to live.

artificialnature.mat.ucsb.edu/

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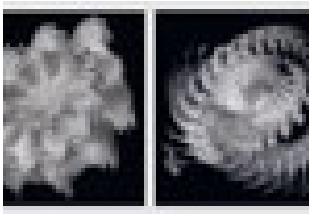


Ballerina (Juried)
Yayoi Yokoyama
Daido University

This work expresses the movements of a ballerina in a magnificent costume of organdy and lace. It is generated by a purely programmatic approach, without traditional drawing and painting. Beginning with a geometric concept based on a spiral, the process generates a great variety of unexpected forms through a sequence of parameters complicated by mapping affine transformations.

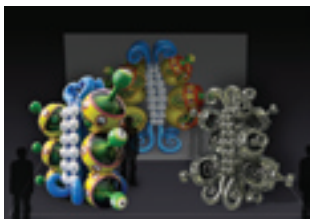
Yayoi Yokoyama explores the relationship between digital technology and forms with an emphasis on visual technology. Her works have been widely exhibited in national and international venues, including the SIGGRAPH 2001 and SIGGRAPH 2003 Art Galleries. This series of work was exhibited at NICOGRAPH International in June 2009 and in New York in July and August 2009.

Blowout at Exit 16A (Juried)
Till Nowak
frameboX

Blowout at Exit 16A is a vision of our future in which computer-generated elements and photo manipulation combine multiple layers of civilization. Old buildings meet new vehicles, an overdose of traffic, a mood of global warming, and the story of a car breakdown in a pulsating world.

Intriguing details, connection of traditional and modern techniques, and a metaphor of stagnation versus progress are the main aspects of the image. Palm trees in the warm, bright sunlight refer to a future of climatic change, while old buildings remind us of the past. Artifacts of the past meet artifacts of the future–not in a context of good and evil, but in a warm and melancholic mood.

This complex digital compositing obeys the rules of traditional painting and photography, so it becomes a bridge between times and dimensions, which is a constant topic of Till Nowak's work.



Bucco - Multi-Dimensional Butterflies (Invited)
Yoichiro Kawaguchi
The University of Tokyo

This work focuses on evolutional butterflies and describes scientific principles as well as applications of aesthetical fundamentals. It explores why butterflies are beautiful from the scientific perspectives of shape, motion, and color. Based on those principles, it aims to "predict" how butterflies looked in ancient times and how they might appear in the distant future.

The main concept is "hypothetical virtual butterfly". The project begins with various conceptual sketches of hypothetical, multi-dimensional future butterflies. The layers represent the shape of wings and eyespot patterns in each period. Eventually, the work goes so far as to build butterflies from future planets. As a very first approach toward interplanetary, multi-dimensional butterflies, we are preparing a simulation environment for analyses of interaction between bodily dynamics of virtual butterflies and aerial dynamics of a planet. In this simulation environment, planetary air is modeled by small particles, assembly of which can represent fluid dynamics.

One Buccuo sculpture is a huge balloon with very complicated and unique structures. Its wings are constructed of multilayered balloons. The other is a huge object made from fiber-reinforced plastics. Their behavior is affected by the audience. Their eyes react to viewers' movements, and they flap, rotate, and pump up their multi-dimensional, structured wings.

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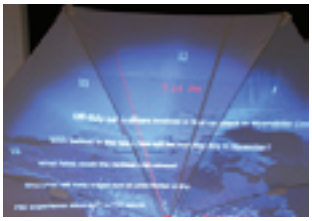

Climate Shifts (Juried)
Christa Erickson
Stony Brook University

We are all affected by our immediate context and its political, environmental, cultural, and temporal influences. Climate Shifts juxtaposes various locations around the globe and their points of view through local news headlines and weather data. Differences in concerns and perspectives emerge, sometimes about the same world events, allowing a glimpse into the collective psyche of each place.

How do news sources in different regions interpret an election? What are the primary concerns in Beirut versus Jerusalem? What events in Asia echo in Latin America? When financial or health crises strike, what patterns of response are similar or different across the globe?

A large umbrella acts as an overhead screen upon which animations shift through various destinations, with the top of the umbrella pole acting as a locator. Climate news, weather, and time are gathered from real-time RSS feeds and layered over an illuminated light-pollution satellite image of the globe. Similarly layered, time is reflected by clock hands that spin and adjust according to the time zone of the current location.

Funded in part by a Fellowship from Sculpture Space, Utica, New York and a Fine Arts, Humanities, and Social Science Grant.

PROGRAMMING ASSISTANCE
Raed Atoui
Guozhu Luo

Coexist? (Juried)
Meng Li
Allistar Peters
Rendall Koski

Human intervention with technology and science, and the need to dominate sometimes lead to unpredictable and seemingly negative results. Unlike most species, humans adapt not simply for survival, but also for social acceptance, wealth, and prosperity. We insist that other species adapt to our ever-changing model of the world or get out of the way.

But what would happen if humans were forced to exist in other species' worlds?

This project is a behavior experiment on how humans react to undesirable species' intrusion in our habitat. It focuses on the cockroach. Cockroaches are real survivors. They have been around for approximately 300 million years. Over 5,000 species have been identified. Cockroaches are very adaptive.

The experiment provides an interactive space with a pile of gloves at the entrance. Attendees are asked to wear a pair of the gloves. Then they see one cockroach–black, crawling, enticing participants to smash it. After it is hit, instead of dying, it explodes to become five cockroaches, and the original cockroach turns red. Hitting it again makes it grow to a giant cockroach. Wings grow out of its shell. The nonlinear narrative unfolds along a curve from trigger to climax, affected by interaction.

collective (Invited)
Hisao Ihara

In the process of making, I try to listen to things and see how things are working together to form a bigger something. My work is an expression of the movement of human activities.

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Dishes (Juried)
Till Nowak
frameboX

Dishes is a digitally manipulated photo that reflects the absurdity of our society, which has been flooded by media as people lose human contact with each other. This ironic social statement connects today's advanced techniques in computer-generated imagery with the craftsmanship of art forms like traditional photography. It is a continuation of Till Nowak's series of twisted realities, as seen in previous SIGGRAPH exhibitions.

Hundreds of satellite dishes infect a skyskraper like a disease. Or is it mankind's unconscious desire to barricade itself from real life, to slow down social life by consuming endlessly accelerating media input? The dishes are pointing in the direction of a distant satellite, expressing the disconnect between people as social beings.

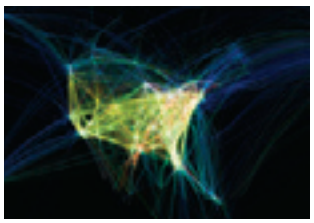
The image is based on a real photograph of a building that was extended to double its original height in Photoshop. The natural perspective distortion was corrected to give the real photo a constructed and unreal feeling. It is derived from photos of real satellite dishes, which were used as texture maps for 12 different 3D models, then duplicated to form groups of instanced geometry and manually arranged in 3ds Max.

Electronic Cuisine (Invited)
Jeremiah Teipen

As citizens of the world, we acknowledge that electronic technological gadgetry has become pervasive. Technology, like other sectors of our economy, reinforces our shopping instinct and consumer culture, and it is a catalyst for the growth of capital. The original consumer goods are now edible products of a food production and distribution system, a system that has evolved into the contemporary global food supply chain, a semi-automated system that allows suppliers to electronically track food shipments from farms to processing facilities and distribution centers to restaurants and stores to our homes.

The logical next evolutionary step is obvious: to embed electronics directly into the food we consume. Our electronics should be as consumable and as perishable as our food. This new epoch will be drenched in the savory sauces of Electronic Cuisine.

Let us go forth then, to harness the energy of mold and bacteria as renewable resources to power our electronic sandwiches and our robotic sushi deluxe and all the new delectable delights that will be GPS and Wi-Fi enabled, sending nutritional information to our doctors and automatically updating our social-media web pages, allowing our friends and fans to be privy to all the minute intimacies of our daily consumption and digestion, all while our meals are enlivened with internal image displays that transform our sustenance into a media-rich advertising and entertainment platform.



Flight Patterns (Invited)
Aaron Koblin
Google

Data from the U.S. Federal Aviation Administration processed to create animations of flight traffic patterns and density.

This work was originally developed as a series of experiments for the project Celestial Mechanics by colleagues Scott Hessels and Gabriel Dunne at the University of California, Los Angeles.

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Happy Wear (Juried)
Camille Scherrer
Julien Pilet

Look at yourself in our mirror, and you might see a paper fox behind you. Strange hands might open your stomach, or you could find a cat asleep in your bag.

Happy Wear inserts a little magic into an unexpected medium: fashion design.

The installation set-up is nearly invisible; technological references disappear to make the user feel even more surprised by the virtual universe. No tags, no sensors, no wires, only simple cloth and a projected mirror. We designed this universe without technical constraints, imagining how a t-shirt or a bag could come to life. We wanted users to feel that they are part of a video clip, but in real time!

The system automatically superimposes animations on t-shirts and projects the resulting image on a screen. To achieve this effect in real time, the system first registers a deformable 2D mesh with the view of the t-shirt. Then it evaluates illumination to reproduce it on the virtual elements. It also segments possible occlusions, to augment only areas where the t-shirts are really visible. A fast wide-baseline feature-matching algorithm, a non-rigid deformation model, and an expectation-maximization segmentation algorithm provide the state-of-the-art technical basis for this artwork.

Human Potential (Movement) (Invited)
Jamie Allen
Newcastle University

Jamie Allen is interested in technologies that suggest ways of reinventing traditional relationships to art and performance. His work in digital media, music, performance, and public art seeks to create physical relationships between people and media.

In this work, a bicycle generator powers a water pump and lighting system for a plantation of hydroponically grown, edible plants. The plants provide nourishment for the biker, and this a sealed micro-ecosystem asks: What are the limits of human "sustainability"?

in Touch (Juried)
Jane Rigler

This performance interlaces the movements of a performer with the choreography of the sound. The flutist uses the sound, the room, and her movements to affect the resonances of a space, mixing technology, music, and pathways to discover new meanings of space. A webcam tracks the movements, and a tiny wireless triggering device attached to the flute controls the structure and pacing of the work as well as the sound processing in real time.

This work-in-progress is part of the artist's 2009 Japan-United States Friendship Commission Fellowship Award project. It is based on five months of research into various Japanese dance traditions and spiritual spaces (architectures), and collaborations with traditional and electronic musicians. The final goal of this work is to create an ensemble piece in which two to four players are able to move within a space and interact with the music, each other, and the sound that travels within the space. The spatialization (sound diffusion) is an important feature of the piece, like an additional player in the ensemble.

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Inflori Illumini (Invited)
Jocelyn Kolb
Albright College

Before pursuing visual arts, I trained as a dancer. I found I was drawn to body adornment because there seemed to be a seamless transition between positioning the body to achieve beauty and creation of an external element that supplements human form. This engagement with the body breathes life into an object, elevating it into an extension of a living being. I create forms I find beautiful and combine them in accordance with my aesthetic, which is inseparably connected to my experiences, generation, and environment. I take into consideration that my work is intended to be worn, and the size and shape of the human form dictates scale and functionality.

Mathematical organization derived from natural forms has always inspired me. I began working with computer-aided design and 3D printing to create my work. I found that CAD allowed me to create organic but precise forms. After my work is modeled on a computer it is produced by a machine that prints in 3D or builds the pieces layer by layer, an additive process that has always reminded me of the growth of tree rings. Recently, I have been looking at natural elements such as shells, spider webs, and whirlpools, and combining them into a hybrid form.

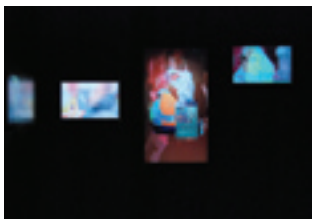
In my work, I discuss the idea of using current technologies and evolving materials to create forms inspired by natural forms that have existed for centuries. I explore similarities I see among nature, the body, and technology: function, mechanics, adaptation, beauty.

INsideOUT (Invited)
Claudia Robles
Performance using real time media (MaxMsp/Jitter)

This performance is about the materialization of the performer's thoughts and feelings on the stage. In the performance, imagination becomes spatial. The stage is a place for the appearance of the invisible. The artist Yasu Ohashi says: "The actors aim at our senses, our body and our unconscious and not at our intellect. Their gestures try to envision THE INVISIBLE WORLD."

The performer, who is surrounded by sound and images, interacts with them using an EEG (electroencephalogram) interface, which measures the performer's brain activity. Those sounds and images (already stored in the computer) are modified consequently by the brain data via MAX/MSP-Jitter. Hence, the performer determines how those combinations will be revealed to the audience. Images are projected to a screen and also onto the performer, while sounds are projected in surround.

This project was realized through a fellowship (artist in residence) at the Kunst und Medienwissenschaften Department of the Academy of Media Arts in Cologne (Germany).



Instances of Commediation (Juried)
Rita Sá

Joana Sá
Sound Composition

Eduardo Raon
Sound Recording and Production

Instances of Commediation recreates the multiplicity of environments we live in today, along with our spatial impermanence. Five LCD screens show different perspectives of simultaneous fictional events that begin as watercolor paintings and later become animated. This process of remediation (Bolter and Grusin, 2000), and of the adjustment of an older medium to a new one, becomes an analogy to the adjustment of our traditional social behaviors to new spaces of social interaction.

Rita Sá's work involves creation of conceptually based micro-sociological animations and installations. She likes to depict social behaviors based on an understanding of "behavior" as an animal-like activity, an intrinsic quality that is present in our daily interactions but tends to be concealed as societies and civilizations grow. She usually plays with the conformity and performing aspects within the interactions that take place inside small social groups.

This work is made possible in part with support from Fundação Oriente and Instituto Camões.

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LED Kimono (Invited)
Miya Masaoka
Bard College

In pre-war Japan, kimonos were encoded with clues indicating gender, caste, age, class, and social ranking. Geographical location defined the colors, as certain plants that produced particular colors only grow in certain regions. Silk techniques are also regional, and the difference between fine and rough silk indicated relative wealth.

For several decades, I have been a musician, composer, and developer of unique koto-based instruments (for example, the Monster Koto and the Laser Koto), and I have been digitally processing and sampling the koto to expand its sonic and gestural components.
A kimono is required for traditional koto performances, and the manner of wearing the kimono is as exact, technical, and aesthetically precise as the playing of the instrument. The kimono can be viewed as an integral and natural part of the instrument.

The LED Kimono is a new light-and-sound instrument made with a single hand-made sleeve embroidered with 444 LEDs that respond to sound and movement and occasionally act as a low-resolution monitor interpreting live video.

The images and motifs represented on the sleeve, derived from traditional kimono patterns, are responsive to and mapped to specified parameters of sound. For example, at times, there is a relationship between the movement of the sleeve and the harmonic spectrum. The performance is presented in several sections, and each section has a slightly different version of interaction with the four elements: the sound, the LEDs, the movement of the dancer, and the sleeve.

Lights and Shadows (Invited)
WOW Inc.

For Milano Salone 2008, the international furnishing accessories exhibition, WOW collaborated on Tokyo Wonder, a joint exhibition with Curiosity and Tonerico, and produced the installation Lights and Shadows. With its peculiar, refined scenic beauty, this exploration of the chaotic enchantment of a Tokyo night view is more a sensual than a cerebral experience.

LIFE AT THE WITCH TRAILS (Invited)
Natalie Bewernitz
Marek Goldowski
New Media Art

LIFE AT THE WITCH TRAILS is based on the idea of creating “living“ structures through sound. Video material from x/y-stereo displays visualizes the phase changing from two-channel audio signals. The sound source is a special audio composition that can not be realized without direct visualization. It contains full-on, sound-dependent motion dynamics and forms complex “cathode-ray objects“, which allow direct (not delayed) visual access to the smallest details of the composition. The representation is not limited by the pictures-per-second time frame of television and computer technology.The interconnection of the aural and visual senses arises in an immediate way, and the visualization of sound obtains a new meaning.

This project has its roots in the works of the abstract filmmaker Oskar Fischinger, who created several works on the topic of visual music in the 1920s and 1930s and was connected to Alexander Lazlo, a pianist who explored color and music. Fischinger used multiple overlapping projected images at live multimedia concerts in the 1920s. As a counterpoint, there are the drawings of the Belgian poet and painter Henri Michaux, who worked on the topic of “language” in his poetry and sometimes focused on “asemic writing” under the influence of hallucinogens.

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LoopLoop (Juried)
Patrick Bergeron

LoopLoop is made from a sequence captured in a train en route to Hanoi. The 1,000 images of this sequence were stitched into one long panoramic image and integrated with other moving elements. Using smooth transitions, animation, and time shifts, the video runs forward and backward, looking for forgotten details, mimicking the way memories are replayed in the mind.

Patrick Bergeron modifies and manipulates the image and its details. His work is a mix of animation, experimental film, and documentary. For the last 15 years, he has been working in digital special effects for the film industry, where he he has worked on films such as “The Lord of the Rings” and “The Matrix”.

Miniverse2
Katja Loher

Working in several different media with a number of collaborators around the world, New York-based Swiss artist Katja Loher explores language and visual form together in an assemblage of technologies and dramatic sculptures. She creates a powerful visual platform that pulls viewers out of their current perspectives and reveals a broader view of existential questions and present concerns in the world.

Miniverse2 presents a bird’s-eye view of people in minimalist uniforms performing a structured choreography. The ball displays scenes in which workers become part of a synchronized movement as they perform tasks that must be done 24 hours a day to keep nature balanced and to allow humanity to survive on our planet in our current numbers. For example, one group of workers attends the work of bees to ensure that they pollinate the flowers.

Mishka (Invited)
Yuliya Lanina

Mishka is a playful depiction of human nature and culture. The main protagonist, a little monkey with a human face, is tired of his corruptive life. He goes from one doll party to another without much joy or engagement. But his life is changed when a three-eyed crawling creature appears and brings Mishka to a mystical place of purity and innocence. By attempting to steal the eggs from the Bird Queen, Mishka breaks the sacred rules and is taken to hell. His soul is taken by Death, and he returns to the world as a mechanical doll whose only purpose is to entertain.

Yuliya Lanina is a Russian-born American artist living and working in New York City who creates alternate realities based on sexuality, fetishism, and identity. All of her characters are dolls and toys made from dissembled parts that have been restructured with other found objects, which makes her works visually provocative. They are both dainty and disturbing, and the viewer is simultaneously drawn in and repelled. The modifications to the figures are both visual and electronic as they become robotic creatures with altered functional capabilities. Characters, sets, storyline, music, editing, and choreography are all Lanina’s creation.

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Open Reel Ensemble (Juried)

Ei Wada
Kimitoshi Sato
Tama Art University

Keitaro Kuno
Keio University

Haruka Yoshida
Musashino Art University

Open Reel Ensemble is performance art by remodeled reel-to-reel tape recorders.

Ivan Illich once said: "Convivial tools are those which give each person who uses them the greatest opportunity to enrich the environment with the fruits of his or her vision." Convivial is originally a French word that means "live together with joy", and by "convivial tool", Illich indicates "an instrument (technology) used differently from the usage of industrial value".

This idea inspired transformation of a reel-to-reel analog tape recorder, a device that some consider obsolete, into a musical instrument, as a "convivial tool" using today's information technology. Reel-to-reel tape decks have disappeared from mainstream use, but by asking, "what if it never disappeared?" the artists recreated it. They attached USB ports to the recorders and customized them so they can "play" them as a musical instrument.

The system uses an iPhone as a remote control to synchronize several decks through an OSC transmission network, auto-switching, and real-time sound processing while recording vibrating tapes to forge a sound using solenoids to control the recording operation and looping the output.

Welcome to the world of sound where "what if" echoes!

Optical Handlers - eeyee (Juried)
Chi Man Siu

Optical Handlers - eeyee is an optical device that dissects embodied visual experience with a simple tool set: LCDs and cameras. It literally splits users' vision into two and relocates it onto their hands separately. The extended vision, along with the mobility of the hands, makes it possible for users to observe the world from a different perspective: through the limbs.

Instead of splitting vision into just left and right, eeyee treats each split stereoscopically, so users experience a double mobile real-time stereoscopic vision, which has a redundant reality that raises an interesting question: "Aren't we living in a 3D world already? Or are we?"

When users wear this device, their experience is completely alienated. They have to manipulate their bodies and invent new ways to cope with their surroundings. Two peeking holes in the face of the goggles allow bystanders to see what eeyee is looking at. As eeyee awkwardly moves around and learns about its environment, it draws a tremendous amount of attention and curiosity. Eventually, it bursts the social bubble with its friendly and funny alien look. Once someone is encouraged to come closer and peek into eeyee's eyes, laughter follows. Essentially, eeyee blinds the users and heightens their senses to create a tension between the user and other human beings.

Plaster_Patch (Juried)
Max Abeles
Harvestworks

Modern medical technology is allowing us to live longer and recover faster. Sometimes a gadget is blatantly affixed to our bodies, and other times, usually in a moment of crisis, circuitry is installed beneath or inside us. The impetus for these rapid advances in medical science came about not from everyday aspirations for a better life but from military and corporate desires to maintain national leadership. On the receiving end of this whirlwind, we are rapidly becoming dependent on the computer chip for much of our daily lives.

From the invention of the first candle to the mass-produced fluorescent tube, the extent to which humans can bend the laws of nature to their whim has proven exponential. In highly industrial societies, the act of walking down a city street allows little rest for the mind, as zeros and ones translated into commercial air and eye space penetrate our ocular and auditory organs (which were not built for such high-powered, high-frequency input). In the 1970s, this technological phenomenon was considered a "future shock", but in the 21st century we have entered a state of "future saturation".

Consumers question nothing as obsolete software is replaced by a new version, quicker than a heart beat. Even using this kind of biological metaphor (blink of an eye, beat of the heart) generates a wave of nostalgic longing for times when pulsing screens did not buffer interpersonal emotional contact. Whether we are strapped to a hospital bed or simply watching television, we are careening down the electron-powered highway toward a universally wired world that is emotionally deafened.

Art Gallery: Adaptation

Exhibition Hall A

Thursday, 17 December	9:30–18:30
Friday, 18 December	9:30–18:30
Saturday, 19 December	9:30–17:00

Platonic Tectonics (Invited)
Tiffany Sum
California State University, Long Beach

Before scientific inquiry revealed how earthquakes happen, there were many traditional explanations. In ancient Japan, it was believed that earthquakes were caused by a giant mischievous catfish flipping around in the center of the earth. In Mongolia, it was a frog, which carried the earth around and twitched now and then. The Gabrielino Indians of southern California believed that three turtles carried the earth, and when they argued and went their separate ways, the land shivered.

Platonic Tectonics reinterprets the discovery of geologic transitions and composes a contemporary earthquake myth that may awake the lonely planet. It is a live interactive video installation that explores the allegory of human connections. Through a simulated earthquake scenario in an immersive and participatory environment, the audience examines the poetry of spatial relations in a physically near and enclosed, yet visually mediated, reunion.
The simulated earthquake studies and reinterprets the aesthetics
of machine movement and the design of natural-disaster prevention systems.

Quintessence (Invited)
European Bridges Ensemble
Hochschule für Musik und Theater Hamburg

Stewart Collinson
Ivana Ognjanovic
Ádám Siska
Andrea Szigetvári
Performing Remotely From Europe

Quintessence is based on the five elements that, according to the alchemists, make up the world: fire, water, earth, air, and the mythical substance aether. Aristotle included it as a fifth element distinct from the other four. It is believed to be the substance that fills the region of the universe above the terrestrial sphere and forms the heavenly bodies.

S-A-09 (Invited)
Shih Chieh Huang
Messy Mix

My work focuses on exploring the unusual evolutionary adaptations undertaken by creatures that reside in inhospitable conditions. I create analogous ecosystems in my installations and populate them with organic living things made from common, everyday objects. I source my wholly synthetic materials from the mundane objects that comprise our modern existence: household appliances, zip ties, water tubes, lights, computer parts, cheap motorized toys, and the like. The objects are dissected and disassembled as needed and reconstructed into experimental primitive organisms that reside on the fringes of evolutionary transformation: computer cooling fans are repurposed for locomotion, Tupperware serves as a skeletal framework, a guitar tuner is rewired to detect sound, and automatic night lights become a sensory input.

Exhibition of this work is made possible by the Council for Cultural Affairs, Taiwan, R.O.C., and Taipei Cultural Center of TECO in New York.

Art Gallery: Adaptation

Exhibition Hall A

Thursday, 17 December	9:30–18:30
Friday, 18 December	9:30–18:30
Saturday, 19 December	9:30–17:00

scoreLight (Juried)
Alvaro Cassinelli

scoreLight is a musical instrument capable of generating sound from the lines of doodles as well as the contours of three-dimensional objects (hands, silhouettes, architectural details). There is no camera or projector: a laser spot explores the shape just as a pick-up head searches for sound over the surface of a vinyl record, with the significant difference that the groove is generated by the contours of the drawing itself.

The preferred mode of operation is contour following. Each con-nected component of the image functions as a sound sequencer. Sound can be generated in the following ways:

• Pitch is controlled by the inclination of the lines, which generates a melody. Rotating the drawing transposes the melody to a higher or lower pitch. Tempo is determined by the length of the contour.

• Pitch is continuously modulated as a function of curvature of the lines. This mode of operation enables one to hear the "roughness" of the drawing.

• Bumps: extreme curvature indicates corners of the drawing. They trigger specific sounds (percussion, glitches, etc).

Other modes of operation include bouncing on the lines with and without "gravity." Sequences can be recorded and reused in the form of drawings (on stickers, for instance).

The purity of the laser light and the fluidity of the motion make for a unique interactive experience that cannot be reproduced by the classic camera-projector setup.

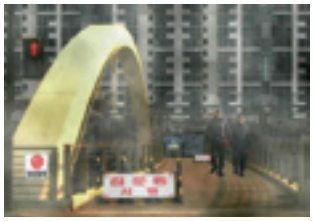
More information:
www.k2.t.u-tokyo.ac.jp/perception/scoreLight/

Slurb (Invited)
Marina Zurkow
New York University

Slurb, a word that collapses "slum" and "suburb", encapsulates a dreamy ode to the rise of slime, a watery future in which jellyfish have dominion. The animated, carnivalesque tailgate party loops and stutters like a vinyl record stuck in a groove.

There is a long history of satirical illustration, epitomized by J.J. Grandville in the 19th century, in which animal-headed humans are deployed in troubling social narratives. Slurb is that kind of cartoon. Facts related to the ocean's radical changes in acidity and oxygen levels form the backbone of the animation. Overfishing, dumping, and warming ocean currents have already triggered a reversion toward a primordial sea in areas larger than the state of Texas.

Slurb's surface is inspired by fictions, like J.G. Ballard's prescient 1962 novel Drowned World, in which inhabitants of a flooded world feel the tug of the sun and dream of a return to their amniotic past.



Special Habitation (Juried)

Gyuwan Choe
Jin WanPark
Seonhee Park
Eunsun Jang
Hoyeon Jang
Chung-Ang University

A new urban development in the area north of the Han river raises many complex questions. How much living space will be provided for residents? What will happen to the current residents of the area? How does the new development fit into the national housing plan? Who will profit from the development? The residents? The politicians? The real estate developers?

Art Gallery: Adaptation

Exhibition Hall A

Thursday, 17 December	9:30–18:30
Friday, 18 December	9:30–18:30
Saturday, 19 December	9:30–17:00

Spook Experiment
Kenseth Armstead
m.e. Media Exploitation

In the summer of 1781, James Armistead Lafayette was the sneakiest man in America. As a slave who became a double agent for America's first intelligence mastermind (George Washington), he succeeded in liberating our insurgent forefathers from the British Empire.

Spook is a multimedia installation project based on James' true story. Two of the installation components (scenes from Kenseth Armstead's feature action/art film "Blowback (Spook 1781)" and video trailers from the 3D graphics video game Spook Digital Yorktown are displayed in the SIGGRAPH Asia 2009 Art Gallery.

For the "Blowback (Spook 1781)" scenes, the artist used a new process he developed called "crowd source casting", which allowed the general public to star in the HD video. Over six months, 100+ people enacted the true story of the double agent/slave-spy James Armistead Lafayette. Viewers are able to select a character: James or one of his two handlers, the Marquis Lafayette (General, US Continental Army) and Lord Charles Cornwallis (General, British Army.) Spook Digital Yorktown was developed from the actual maps used in the American Revolution by Cornwallis and Lafayette and gives a fully realized custom view of the terrain James Armistead Lafayette successfully navigated enroute to ending the war.

Tengible
WOW Inc.

The theme of Tengible is creating a connection between the tangible and the intangible. It combines the shadows of physical objects with the shadows of the graphics. One may appear solid, the other simulated. But what is experienced is neither. It falls somewhere between these two worlds.

Truce: Strategies for Post-Apocalyptic Computation (Juried)
Robin Meier

In their seminal paper, "Flying in Tune: Sexual recognition in mosquitoes," Gabriella Gibson and and Ian Russell from the University of Greenwich discovered an inspiring phenomenon: male mosquitoes change their buzzing frequency to match that of female mosquitoes. This synchronization brings their wing beats to within a millisecond or less of one another. The authors suggest that this phenomenon facilitates mosquitoes' ability to copulate mid-flight.

Truce exploits this phenomenon to engage living mosquitoes in song, inspired by the North Indian classical vocal tradition of Dhrupad. The installation explores reciprocal musical interactions between the mosquito and the computer. The computer produces a stimulus sound to which the mosquitoes synchronize. Subsequently, the computer sings a third voice that responds to the musical inflections of the mosquitoes' buzz. These three voices come in and out of harmony depending on the mosquitoes' propensity to maintain sync with the stimulus signal.

Each mosquito is equipped with a loudspeaker that delivers the stimulus signal, a sensitive microphone for picking up the mosquito's buzz, a camera for a closer look at the insect, a kinetic component that allows the mosquito to rest every few minutes, and a light bulb that shows the mosquito's activity.

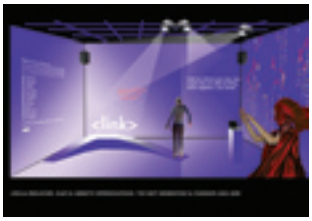
Art Gallery: Adaptation

Exhibition Hall A

Thursday, 17 December	9:30–18:30
Friday, 18 December	9:30–18:30
Saturday, 19 December	9:30–17:00

Warmth Through the Night (Invited)
Jon Elliott
Albright College

I investigate and utilize the imagery and symbolism of technological ideology and mythology, and how these images and symbols reinforce a sense of dominance over the environment and the rest of humanity. In recent work, I have forced together elements of this imagery with images of their unacceptable consequences. These are skeptical paintings, depicting mounds of old and obsolete computers and televisions rupturing the crisp, wire-frame façade of virtualesque scenes. Computers and televisions (these amalgams of plastic, heavy metals, and other toxic wastes, these transmitters of fantasy, ideology, identity, and creators of virtual worlds) are depicted as accumulating waste in the process of becoming toxic nightmares. Seen in the act of transmission, their screens flicker on and off to display scenes of pride and shame, glory and disgust, myth tainted with visions of what we wish to ignore or conceal about ourselves and our history.



Website Impersonations: The Next Generation (Invited)
Ursula Endlicher

Website Impersonations: The Next Generation is a new installation and live performance series that utilizes web code as layout and choreography. For SIGGRAPH Asia 2009, the installation hosts the "hidden mechanisms" of several web sites. A dancer, the audience, and I shape the course of each performance, which will take place within a "web-driven" environment. The web sites to be performed are yahoo.co.jp, fc2.com, and google.co.jp, which are listed as the three most used sites in Japan (Alexa.org's web-ranking).

The source code of a website (HTML tags) is interpreted live on stage into new dance movements, which are immediately translated into text-based descriptions and then stored online in the html-movement library. This information is re-used on stage as new instruction material. As the data performance progresses, more html movements are developed, stored, and altered by the participants. The user (the audience) takes an active role in the performances of yahoo, google, etc.

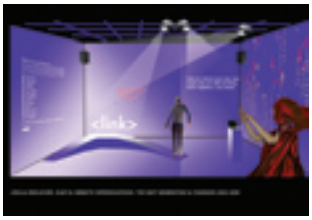
The html-movement library is a repository of often butoh-inspired movements based on the functionality of HTML tags in a web browser. The original idea to combine html and movements stems from the similarities between working with butoh, where a dancer "becomes" an image, and how a web browser displays content.

Art Gallery: Performances

Art Gallery Opening Party and Performances

Exhibition Hall A
Thursday, December 17 17:00 - 19:00

An opportunity for attendees to meet and converse with many of the artists exhibiting at SIGGRAPH Asia 2009. Live performances are presented throughout the opening event, including Open Reel Ensemble and Plaster Patch.



Ursula Endlicher: Website Impersonations: The Next Generation

Interactive Installation and Performance

Exhibition Hall A

Thursday, 17 December
10:00 - 10:30, 16:00 - 16:30

Friday, 18 December
10:00 - 10:30, 16:00 - 16:30

Saturday, 19 December
10:00 - 10:30, 14:00 - 14:30

Max Abeles: Plaster Patch

Exhibition Hall A

Thursday, 17 December
11:00 - 11:30, 17:00 - 17:30

Friday, 18 December
11:00 - 11:30

Saturday, 19 December
11:00 - 11:30

Claudia Robles: Inside Out

Electronically mediated performance

Room 411/412

Thursday, December 17
12:00 - 12:30

Optical Handlers – Eeyee

Performance

Exhibition Hall A

Friday, December 18
14:00-16:00

Wada Ei: Open Reel Ensemble

Musical Interactive Performance

Room 411/412

Friday, December 18
17:00 - 17:30

Saturday, December 19
15:00 - 15:30

Miya Masaoka: LED Kimono

Electronically Mediated Performance

Room 411/412

Saturday, December 19
12:00 - 12:30

Jane Rigler: In Touch

Musical Interactive Performance

Room 411/412

Saturday 19 December
13:30–14:00

European Bridges Ensemble: Quintessence

Networked Musical Performance

Room 411/412

Saturday, December 19
17:00-18:00

Art Gallery: Artist Talks

Exhibition Hall A
Thursday, 17 December 13:00 - 17:00
Friday, 18 December 13:00 - 17:00

Artists from all over the world are gathering in Yokohama, giving SIGGRAPH Asia 2009 a unique opportunity to get to know them personally and hear about their artwork. Throughout the conference, many artists will give informal talks about the work they are showing in the Art Gallery and provide detailed summaries of their conceptual and technical process.

Art Gallery: Jury and Reviewers

ART GALLERY CHAIR
Yuko Oda
New York Institute of Technology

VICE CHAIR
Mariko Tanaka
Cavin-Morris Gallery

JURY
Ellen Pearlman

Hans Tammen
Harvestworks Residency

Jing Zhou
Monmouth University

Kathryn Morabito
New York University

Matthew Garrison
Albright College

Nobuo Takahashi
Nagoya City University

Terry Nauheim
New York Institute of Technology

Yasuo Ohba
NAMCO BANDAI Games Inc.

Yuka Yokoyama
Basekamp

REVIEWERS
Brian Cavanaugh

Cesar Alvarez
MusicIsFreeNow.org

Charles Schwartz

Christine Miller Kelly
Miller Kelly Design, LLC

Edward Purver

Erik Carver
Rensselaer Polytechnic Institute

Erkki Huhtamo
University of California, Los Angeles

Gretchen Kraus
Julian Schnabel Studio

Howard Huang
Bell Labs

Jason Nickel

Jeff Thompson
University of Nebraska-Lincoln

Karen Gilbert

Knut Hybinette
Cleveland Institute of Art

Linda Lauro-Lazin
Pratt Institute

Lisa Jevbratt
University of California, Santa Barbara

Matthew Ostrowski
Harvestworks Residency

Maura Doern Danko
Art Institute of Pittsburgh

Moritz Wettstein
Harvestworks Residency

Nailah Crittendon

Rozina Vavetsi
New York Institute of Technology

Steve Rittler
School of Visual Arts

Nisi Jacobs

Patty Wongpakdee

Rashaad Newsome

Computer Animation Festival: Screening Schedule

	Thursday 17 December		Friday 18 December		Saturday 19 December	
	Level 1 Main Hall	**Room 419**	**Level 1 Main Hall**	**Room 419**	**Level 1 Main Hall**	**Room 419**
09:00 - 09:30		Dream		Monster		Death
09:30 - 10:00		Cute		Science		Dream
10:00 - 10:30		Fight		Magic		Cute
10:30 - 11:00		Monster		Death		Fight
11:00 - 11:30		Science		Dream		Monster
11:30 - 12:00		Magic		Cute		Science
12:00 - 12:30		Death		Fight		Magic
12:30 - 13:00		J Media Arts–Animation		Monster		Death
13:00 - 13:30		Dream		Science		Dream
13:30 - 14:00		Cute		Magic		J Media Arts–Sound
14:00 - 14:30		Fight		Death		Cute
14:30 - 15:00		Monster		J Media Arts–Art & Entertainment		Fight
15:00 - 15:30		Science		Dream		Monster
15:30 - 16:00		Magic		Cute		Science
16:00 - 16:30		Death		Fight	Electronic Theater (16:15–18:15)	Magic
16:30 - 17:00		Dream		Monster		Death
17:00 - 17:30		Cute		Science		Dream
17:30 - 18:00		Fight		Magic		Cute
19:00 - 21:00	Electronic Theater		Electronic Theater		Electronic Theater	

Computer Animation Festival: Screening Schedule

Dream

– Burning Stage
– au Smart Sports Green Road Project
– Lebensader
– The Making of DEADLINE
– Orange Hollywood
– Mercedes Benz Campaign–CDI Concept
– Numeric Code
– Oneironaut
– Masks
– Pathos
– Suntory Boss Black: Flying Whales

SCREENING SCHEDULE

Thursday 17 December	09:00–09:30, 13:00–13:30, 16:30–17:00
Friday 18 December	11:00–11:30, 15:00–15:30
Saturday 19 December	09:30–10:00, 13:00–13:30, 17:00–17:30

Cute

– A Special Gift
– Gemini
– Scarygirl Game Trailer
– ITFS Spot Frosch im Hals
– Live Music
– On The Level
– ITFS Spot Farbzwerge
– Pelephone Oysters
– Peeping Life: Ferris Wheel

SCREENING SCHEDULE

Thursday 17 December	09:30–10:00, 13:30–14:00, 17:00–17:30
Friday 18 December	11:30–12:00, 15:30–16:00
Saturday 19 December	10:00–10:30, 14:00–14:30, 17:30–18:00

Fight

– Harmonix “Rock Band II”
– Topi
– Our Wonderful Nature
– Flyman
– Tom N Jerry

SCREENING SCHEDULE

Thursday 17 December	10:00–10:30, 14:00–14:30, 17:30–18:00
Friday 18 December	12:00–12:30, 16:00–16:30
Saturday 19 December	10:30–11:00, 14:30–15:00

Computer Animation Festival: Screening Schedule

Monster

– Flight Lessons
– Ghostbusters Video Game Television Commercial
– Monster Coins
– FINAL FANTASY XIV
– Peeping Life: Undergarment Maker
– Sonic: Night of the Werehog
– Pollo

SCREENING SCHEDULE

Thursday 17 December	10:30–11:00, 14:30–15:00
Friday 18 December	09:00–09:30, 12:30–13:00, 16:30–17:00
Saturday 19 December	11:00–11:30, 15:00–15:30

Science

– Project: Alpha
– Entire Topography of Lunar Surface
– Love_Child
– Tour de France 2009 – The Route
– The Magical Eyeball

SCREENING SCHEDULE

Thursday 17 December	11:00–11:30, 15:00–15:30
Friday 18 December	09:30–10:00, 13:00–13:30, 17:00–17:30
Saturday 19 December	11:30–12:00, 15:30–16:00

Magic

– Nuri
– Entering The Mind Through the Mouth

SCREENING SCHEDULE

Thursday 17 December	11:30–12:00, 15:30–16:00
Friday 18 December	10:00–10:30, 13:30–14:00, 17:30–18:00
Saturday 19 December	12:00–12:30, 16:00–16:30

Computer Animation Festival: Screening Schedule

Death

– Draw Poker

– Coach

– URS

– SURFACE: A Film From Underneath

– Heavenly Appeals

SCREENING SCHEDULE

Thursday 17 December	12:00–12:30, 16:00–16:30
Friday 18 December	10:30–11:00, 14:00–14:30
Saturday 19 December	09:00–09:30, 12:30–13:00, 16:30–17:00

J Media Arts–Animation

Thursday 17 December 12:30–13:00

J Media Arts–Art & Entertainment

Friday 18 December 14:30–15:00

J Media Arts–Sound

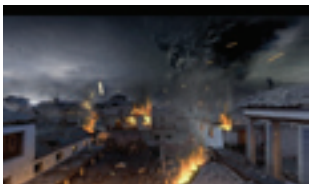
Saturday 19 December 13:30–14:00

Computer Animation Festival

Electronic Theater

Level 1, Main Hall

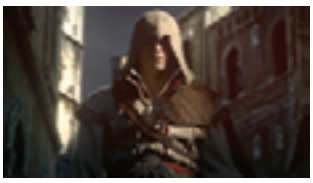
Thursday, 17 December	19:00-21:00
Friday, 18 December	19:00-21:00
Saturday, 19 December	16:15-18:15
Saturday, 19 December	19:00-21:00



A Day In Pompeii
Joel Delle-Vergin
Zero One Animation
Australia

AMF Caterpillar
Filip Engstrom
The Mill
USA

Anchored
(Best of Show)
Lindsey Olivares
Ringling College
of Art and Design
USA

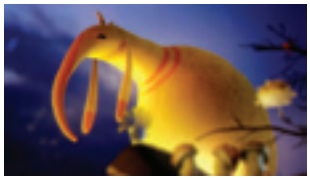


Assassin's Creed 2
(Best Technical Award)
Istvan Zorkoczy
Digic Pictures
Hungary

Astro Boy
David Bowers
Imagi Studios
Hong Kong

Audi "Unboxed"
Russell Brooke
Aaron Duffy
Passion Pictures
United Kingdom

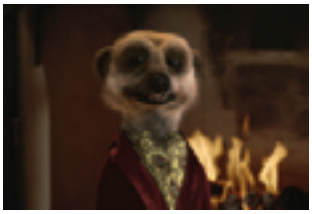
Cannons in
the Other World
Eli Sverdlov
Gravity Visual Effects
and Design
Israel



Cartoon Forum Trailer
Regina Welker
Max Lang
Filmakademie
Baden-Württemberg
Germany

Cat Shit One -
The Animated Series
Kazuya Sasahara
Anima Inc.
Japan

Colors
Akira Nakamura
Anima Inc.
Japan



Compare the Market
"Aleks"
Darren Walsh
Passion Pictures
United Kingdom

DEADLINE
Bang-yao Liu
Savannah College of Art
and Design
USA

Dim Sum
Jin Sop Kum
Ringling College
of Art and Design
USA

Divers
Paris Mavroidis
Pratt Institute
USA

Electronic Theater Opening
and Closing Animations
Lucsafilm Singapore

Flip
Peter Allen
Holmesglen TAFE
Australia

Computer Animation Festival

Electronic Theater

Level 1, Main Hall

Thursday, 17 December	19:00-21:00
Friday, 18 December	19:00-21:00
Saturday, 19 December	16:15-18:15
Saturday, 19 December	19:00-21:00

GREED
Alli Sadegiani
Embrya AB
Sweden

ITFS SPOT DROP
Gottfried Mentor
Filmakademie
Baden-Württemberg
Germany

ITFS SPOT COLORFLOW
Sebastian Nozon
Sascha Geddert
Roland Petrizza
Filmakademie
Baden-Württemberg
Germany

JUMP
Till Nowak
Framebox
Germany

OLM DIGITAL 2009 WORKS
Kunihiko Yuyama
Takashi Miike and others
OLM Digital, Inc.
Japan

Oxygen
Christopher Hendryx
Ringling College
of Art and Design
USA

Peeping Life: Fiddle Faddle Couple
Ryouichi Mori
CoMix Wave Films Inc.
Japan

Pigeon: Impossible
Lucas Martell
USA

REACH
Luke Randall
AnimationMentor
Australia

Star Wars: The Clone Wars - Rise of the Bounty Hunters
Dave Filoni
Lucasfilm Animation Singapore
Singapore

Steel Life
Mathieu Gérard
Université Paris 8
France

Symphony
Erick Oh
University of California,
Los Angeles
USA, South Korea

TEKKEN 6 BLOODLINE REBELLION INTRO
Taisuke Aihara
NAMCO BANDAI Games Inc.
Japan

THE BEAUTY
Mao Qichao
China

The Incident at Tower 37
Chris Perry
Hampshire College
USA

Tokyo Mater
John Lasseter
Pixar Animation Studios
USA

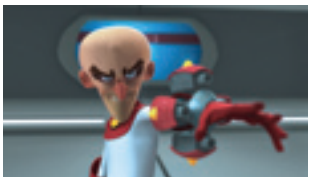
Computer Animation Festival

Electronic Theater ■ ●

Level 1, Main Hall

Thursday, 17 December	19:00-21:00
Friday, 18 December	19:00-21:00
Saturday, 19 December	16:15-18:15
Saturday, 19 December	19:00-21:00

Transformers: Revenge Of The Fallen Opening Cinematic
Nathan Maddams
Dane Maddams
Plastic Wax Animation
Australia



Trigger Happy
Javier Lopez-Duprey
Ringling College of Art and Design
USA

World Soccer Winning Eleven 2009
Goh Fujita
Digital Media Lab., Inc.
Japan

Computer Animation Festival

Animation Theater ■ ● ▲

Room 419

Thursday, 17 December	9:00-18:00
Friday, 18 December	9:00-18:00
Saturday, 19 December	9:00-18:00

A Special Gift
Will Hoag
Savannah College of Art and Design
USA

au Smart Sports Green Road Project
Naoko Tajima
Omnibus Japan Inc.
Japan

Burning Stage
Sunwoo Yang
Electronics and Telecommunications Research Institute
South Korea

Coach
Nikita Ratnikov
Artem Sukharev
15 Frame Animation
Ukraine

Draw Poker
Emil Sellström
Svend Rothmann Bonde
Stephan Süssmann
Lise Vestergaard Jensen
The Animation Workshop
Denmark

Entering the Mind Through the Mouth
Jin Sung Choi
Academy of Art University
South Korea

Entire Topography of Lunar Surface
Hirotaka Nakayama
National Astronomical Observatory of Japan
Japan

FINAL FANTASY XIV
Kazuyuki Ikumori
Square Enix Co. Ltd.
Japan

Computer Animation Festival

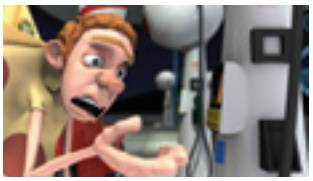
Animation Theater

Room 419

Thursday, 17 December	9:00-18:00
Friday, 18 December	9:00-18:00
Saturday, 19 December	9:00-18:00

Flight Lessons
Neil Helm
Savannah College of Art and Design
USA

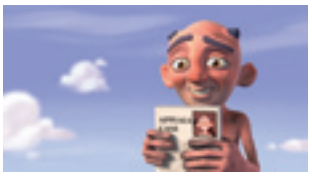
Flyman
Shu-Wei Chang
National Taiwan University of Arts
Taiwan



Gemini
Marc Yates
Ringling College of Art and Design
USA

Ghostbusters Video Game Television Commercial
Dane Maddams
Plastic Wax Animation
Australia

Harmonix "Rock Band II"
Pete Candeland
Passion Pictures
United Kingdom



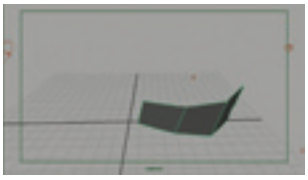
Heavenly Appeals
David Lisbe
Ringling College of Art and Design
USA

ITFS Spot Farbzwerge
Regina Welker
Filmakademie Baden-Württemberg
Germany

ITFS Spot Frosch im Hals
Wolfram Kampffmeyer
Filmakademie Baden-Württemberg
Germany

Lebensader
Angela Steffen
Filmakademie Baden-Württemberg
Germany

Live Music
Yair Landau
Mass Animation
USA



Love_Child
Sheng-Wen Hsiao
National Taiwan University of Science and Technology
Taiwan

Masks
Jerome Boulbes
Lardux Films
France

Mercedes Benz Campaign - CDI Concept
JL
JL Design
Taiwan

Monster Coins
Vance Yang
SOFA Studio
Taiwan

Numeric Code
Nobuo Takahashi
Nagoya City University
Japan

Nuri
Kendra Vander Vliet
Ringling College of Art and Design
USA

Computer Animation Festival

Animation Theater

Room 419

Thursday, 17 December	9:00-18:00
Friday, 18 December	9:00-18:00
Saturday, 19 December	9:00-18:00

On The Level
Michael Rutter
Ringling College of Art and Design
USA

Oneironaut
Erica Kobren
The School of Visual Arts
USA

Orange Hollywood
Eli Sverdlov
Gravity Visual Effects and Design
Israel

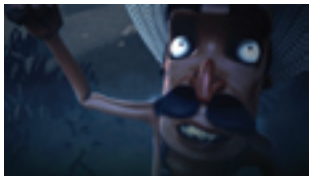
Our Wonderful Nature
Tomer Eshed
Hochschule für Film und Fernsehen "Konrad Wolf"
Germany

PATHOS
Dennis Cabella
Marcello Ercole
Fabio Prati
Illusion
Italy

Peeping Life: Ferris Wheel
Ryouichi Mori
CoMix Wave Films Inc.
Japan

Peeping Life: Undergarment Maker
Ryouichi Mori
CoMix Wave Films Inc.
Japan

Pelephone Oysters
Eli Sverdlov
Gravity Visual Effects and Design
Israel



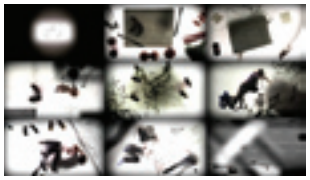
Pollo
Juan Andres Castaneda
Ringling School of Art and Design
Colombia

Project: Alpha
Matthías Bjarnason
Christian Munk Sørensen
Nicolai Slothuus
The Animation Workshop
Denmark

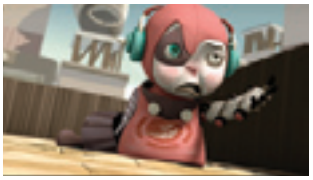
Scarygirl Game Trailer
Nathan Jurevicius
Passion Pictures
United Kingdom

Sonic: Night of the Werehog
Takashi Nakashima
Sega Corporation
Japan

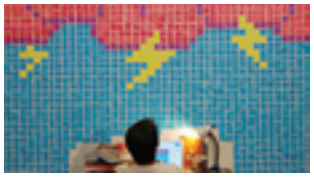
Suntory Boss Black: Flying Whales
Koichiro Tsujikawa
Omnibus Japan Inc.
Japan



SURFACE : A Film From Underneath
Varathit Uthaisri (TU+)
Parsons The New School for Design
USA



The Magical Eyeball
Hsun-Chun Chuang
National Taiwan University of Science and Technology
Taiwan



The Making of DEADLINE
Bang-yao Liu
Savannah College of Art and Design
USA

Computer Animation Festival

Animation Theater ■ ● ▲

Room 419

Thursday, 17 December	9:00-18:00
Friday, 18 December	9:00-18:00
Saturday, 19 December	9:00-18:00

Tom N Jerry
Jin Sung Choi
Academy of Art University
South Korea

Topi
Arjun Rihan
University of
Southern California
USA

Tour de France 2009 - The Route
Charles Dizier
Trimaran
France

URS
Moritz Mayerhofer
Filmakademie
Baden-Württemberg
Germany

Computer Animation Festival Committee

COMPUTER ANIMATION FESTIVAL CHAIR
Leo Hourvitz
Polygon Pictures, Inc.

COMPUTER ANIMATION FESTIVAL COMMITTEE
Ayaka Kamide
Keio University

Jess Mantell
Keio University

Julian Liao
Biba EFX

Keiki Kita
plus-alpha.tv

Samuel Lord Black
Autodesk, Inc.

Yosuke Ashizawa
Sugar Company, Inc.

COMPUTER ANIMATION FESTIVAL TRAILER EDITOR
Keiki Kita
plus-alpha.tv

COMPUTER ANIMATION FESTIVAL TRAILER MUSIC
"Lotus" by Saitone
VORC Records

COMPUTER ANIMATION FESTIVAL JURY

Ewan Johnson
DreamWorks Animation, Inc.

Hiroyuki Seshita
Casio Digital Entertainment, Inc.

Jinny H.J. Choo
ONCOMM, K'ARTS

Leo Hourvitz
Polygon Pictures, Inc.

Saschka Unseld
Pixar Animation Studios

Yoshinori Moriizumi
OLM Digital, Inc.

SPECIAL THANKS
Eddie Suzuki
Japan Digital Content Association

Haruna Sakai
Digital Hollywood University

Masanari Kubo
Polygon Pictures, Inc.

TRIAGE JURY
Hiroshi Chida

Jun Saito
SEGA Visual Engineering

Ken Anjyo
OLM Digital, Inc.

Masanari Kubo
Polygon Pictures, Inc.

Matt Smith

Minoru Okamoto
Polygon Pictures, Inc.

Nobuo Takahashi
Nagoya City University

Norico Wada
Tokyo Broadcasting System Television, Inc.

Ogaki Shinji
Square Enix Co, Ltd.

Ryusuke Villemin
Square Enix Co., Ltd.

Syoyo Fujita
Light Transport Entertainment Inc.

Tomoko Nagai
Katten Kabinet
Yoshinori Sugano
Genseisha

COMPUTER ANIMATION FESTIVAL MASCOT ANIMATORS
Shinji Ameda
Kumiko Arai
Tomonori Isogaya
Taiki Ito
Chihiro Iwamoto
Mari Kameyama
Haruki Kato
Yoshihiro Maruyama
Satoko Matsumaru
Hiroki Matsuoka
Takato Nakai
Moemi Nakano
Kumiko Obora
Naomi Ogura
Koichi Okamura
Yuko Sato
Tetsuro Satomi
Mio Sawaguchi
Nobuhiko Suzuki
Yugo Takahashi
Mai Takayanagi
Keigo Takeshige
Naomi Tanaka
Takeshi Tsuzaki
Yoshihumi Uehiro
Shuhei Yamada
Koji Yamamoto
Digital Hollywood University

Melanie Beisswenger
Nanyang Technological University

Toru Ogura
Takeshi Saito
Takayuki Sato
University of Electro-Communications

Atsushi Sugito
Seiichi Tsuji
Yoshida Gakuen

Courses

Wednesday, 16 December

OpenCL: Parallel Programming for Computing and Graphics

9:00–18:00 | Room 502

The rapidly changing capabilities of modern graphics processing units (GPUs) mean that developers need to understand how to combine parallel-programming techniques with the traditional interactive rendering pipeline exposed by OpenGL and Direct3D. This course demonstrates how to combine traditional rendering APIs with advanced parallel computation using OpenCL (Open Computing Language), a cross-platform API for programming parallel systems such as GPUs.

The course is presented by industry experts in general-purpose programming using GPUs. The first section reviews the basics of the OpenCL API including a "Hello World" application written in OpenCL Attendees with laptops will be able to try the examples on their own during the course. The second section covers more advanced cases, including how to write applications that interact with standard graphics APIs. The final section includes performance-optimization "tips and tricks" for writing OpenCL applications.

LEVEL
Beginner

PRESENTATION LANGUAGE
Presented in English

PREREQUISITES
Knowledge of general-purpose programming languages. A cursory knowledge of graphics-processor operation is beneficial but not required.

INSTRUCTOR(S)
Justin Hensley
Advanced Micro Devices, Inc.

Jason Yang
Advanced Micro Devices, Inc.

Mark Harris
NVIDIA Corporation

9:00–10:45
Introduction to OpenCL

10:45–11:00
Break

11:00–12:45
OpenCL by Example: Introduction

12:45–14:15
Lunch

14:15–16:00
OpenCL by Example: Advanced

16:00–16:15
Break

16:15–18:00
OpenCL Performance and Hardware-Specific Optimization

Courses

Wednesday, 16 December

What's Your Story?

9:00–12:45 | Level 5, Auditorium

What's your story? Can you explain it in a sentence? If the central idea of your film is not clear to you, how can it be to your audience? Does your story pass the "who cares" test? And do you know that story is NOT king, but character IS?

This course examines the nuts and bolts of feature film storytelling in a straightforward, accessible manner for everyone seeking to improve the resonance of their movies on the international animation market. The way to the audience's wallet is through the heart. Is your story stuck in the head?

The course explores story loglines, genres, hooks, and twists with an eye towards a compelling stage for an appealing hero. The story-outline section addresses the foundation of a strong and flexible story "spine" and then assembles the full skeleton. In the story-boarding section, the course reviews the process for laying out an entire feature film from beginning to end by applying tried-and-true structural beats. The course concludes with an interactive audience brainstorming session and a pitch of the resulting story by presenter Kevin Geiger.

LEVEL
Intermediate

PRESENTATION LANGUAGE
Presented in English

PREREQUISITES
Proficiency with spoken English. Proficiency with written English is strongly recommended. Familiarity with common storytelling conventions and general film history will help attendees understand the presentation.

INSTRUCTOR(S)
Kevin Geiger
Animation Options LLC

9:00–9:05

Introduction

9:05–9:45

Story Idea

- Loglines
- Titles
- The Hook
- The Twist
- Genres
- The Hero

9:45–10:20

Story Outline

- The Story Core
- The Story Outline
- Character Development
- Keys to Great Scenes

10:20–10:45

Story Boarding

- Act 1 (row 1)
- Act 2 (rows 2 & 3)
- Act 3 (row 4)

10:45–11:00

Break

11:00–12:25

Story Building

12:25–12:45

The Pitch

Courses

Wednesday, 16 December

Theory and Methods of Lightfield Photography

9:00–12:45 | Room 513

Lightfield photography is based on capturing discrete representations of all light rays in a volume of 3D space. Compared to conventional photography, which captures 2D images, lightfield photography captures 4D data. To multiplex this 4D radiance onto conventional 2D sensors, lightfield photography demands sophisticated optics and imaging technology. The final image rendering is based on creating 2D projections of the 4D radiance.

This course presents lightfield analysis in a rigorous mathematical way, which often leads to surprisingly direct solutions. The goal is simplicity. The course emphasizes underlying fundamental ideas. The mathematical foundations are used to develop computational methods for lightfield processing and image rendering, including refocusing and perspective viewing. While emphasizing theoretical understanding, the course also demonstrates practical approaches and engineering solutions for the discussed problems.

The course includes a hands-on demonstration of several working lightfield cameras that implement different methods for radiance capture, including the micro-lens approach of Lippmann and the plenoptic camera, the mask- enhanced “heterodyning” camera, the lens-prism camera, multispectral and polarization capture, and the plenoptic 2.0 camera. Various computational techniques for processing captured data are demonstrated, including Ng’s Fourier slice algorithm, the heterodyned light-field approach for computational refocusing, rendering, glare reduction, and others.

LEVEL
Intermediate

PRESENTATION LANGUAGE
Presented in English

PREREQUISITES
Basic knowledge of ray optics, image processing, linear algebra, and programing. Deeper involvement in one or several of those areas is a plus, but not required to understand the course.

INSTRUCTOR(S)
Todor Georgiev
Adobe Systems Incorporated

Andrew Lumsdaine
Indiana University

9:00–9:10

Background and Motivation

9:10–10:40

Radiance Theory and Modeling

10:40–10:45

Hardware Demonstration

10:45–11:00

Break (Optional: Hands-On with Radiance Cameras)

11:00–11:15

Radiance Theory and Modeling (Continued)

11:15–12:45

Computational Methods for Radiance

12:40–12:45

Wrap Up

Courses

Wednesday, 16 December

テニスゲームを作ってみよう！「ゲームプログラミングひとめぐり」

9:00–12:45 | Room 501

ゲームが大規模化、高度化するにつれて、ゲームを作るために必要な技術はどんどん広がってしまっており、ゲームプログラミングについてのイメージを掴むのがどんどん難しくなっています。そこで、今回は一人でゲーム開発の全工程を経験することを目的としてお話をしてみることにしました。

テニスゲームを題材にして、最小限の2Dゲームからカメラワークやサウンド、シェーダ演出などを含んだ現代的な3Dゲームに仕上げていく過程を駆け足で紹介します。

既にあるゲームの部分について説明するのではなく、ちょうど料理番組のように、ゼロから始めて完成させるまでを追体験していただこうという趣旨です。

規模さえ小さければ、一人でゲームは作れるのだ、ということを実感できることでしょう。

レベル
初級

使用言語
日本語のみでの講演

事前確認事項
(コース内容を理解するに当り必要な聴講者の知識、アプリケーション分野、グラフィックス経験等)C++でのプログラミング経験と高校程度のベクトルと行列の知識。最後に行うシェーダのお話に関しては、最近の3DCGの知識があればよりよく理解できますが、なくてもイメージはつかめることと思います。

講演者名・所属
株式会社セガ
第二AM研究開発部プログラマ
平山尚

9:00–9:50

導入(目的、コンセプト)

専用ライブラリの説明

最小限の2Dゲーム(仕様と実装、ゲームループの概念)

GPUで三角形を描くこと

テクスチャ(素材の準備、ロードの方法)

簡単な2Dエフェクト

場面遷移の設計と実装、実際の飾りつけ

9:50–9:55

Break

9:55–10:45

3D化(透視変換、ビュー変換)

3Dプリミティブの描画(三角形、球、平行四辺形)

ビルボードによるエフェクト

Zバッファ、アルファブレンド

3Dゲームにおけるゲームデザイン

10:45–11:00

Break

11:00–11:50

カメラワーク

照明計算

11:50–11:55

Break

11:55–12:45

影手法(シャドウマップ)

ポストプロセスでのブルームエフェクト

Courses

Wednesday, 16 December

Build Your Own 3D Scanner: Optical Triangulation for Beginners

14:15–18:00 | Room 501

Over the last decade, digital photography has entered the mainstream. Inexpensive, miniaturized cameras are now routinely included in consumer electronics. Digital projection is poised to make a similar breakthrough, with a variety of vendors offering small, low-cost projectors. As a result, active imaging is a topic of renewed interest in the computer graphics community. In particular, low-cost homemade 3D scanners are now within reach of students and hobbyists with modest budgets.

This course provides beginners with the mathematics, software, and practical details they need to leverage projector-camera systems in their own 3D scanning projects. An example-driven approach is used throughout; each new concept is illustrated using a practical scanner implemented with off-the-shelf parts. The course concludes by detailing how these new approaches are used in rapid prototyping, entertainment, cultural heritage, and web-based applications.

LEVEL
Beginner

PRESENTATION LANGUAGE
Presented in English

PREREQUISITES
Basic undergraduate-level knowledge of linear algebra. While executables are provided for beginners, attendees with prior knowledge of Matlab, C/C++, and Java programming will be able to directly examine and modify the source code.

INSTRUCTOR(S)
Douglas Lanman
Gabriel Taubin
Brown University

14:15–16:00

Introduction

The Mathematics of 3D Triangulation
Taubin

3D Scanning with Swept-Planes
Camera and Swept-Plane Light Source Calibration
Lanman

Reconstruction and Visualization Using Point Clouds
Taubin

16:00–16:15

Break

16:15–18:00

Structured Lighting
Projector Calibration and Reconstruction
Lanman

Combining Point Clouds From Multiple Views
Surface Reconstruction From Point Clouds
Elementary Mesh Processing
Taubin

Conclusion and Q&A

Courses

Wednesday, 16 December

Spectral Mesh Processing

2:15 PM–6:00 PM | Room 511/512

Spectral mesh processing is an idea that was proposed at the beginning of the 1990s to port the "signal processing toolbox" to the setting of 3D mesh models. Recent advances in both computing power and numerical software make it possible to fully implement this vision. In the classical context of sound and image processing, Fourier analysis was a cornerstone in development of a wide spectrum of techniques, such as filtering and recognition, to name but a few.

In this course, attendees learn how to transfer the underlying concepts to setting a mesh model, how to implement the "spectral mesh processing" toolbox, and how to use it for real applications, including filtering, shape matching, remeshing, segmentation, and parameterization, among others.

LEVEL
Advanced

PRESENTATION LANGUAGE
Presented in English

PREREQUISITES
Knowledge of mesh processing, programming, and linear algebra.

INSTRUCTOR(S)
Bruno Levy
INRIA

Richard Hao Zhang
Simon Fraser University

14:15–14:20
Levy

Introduction

14:20–15:05
Zhang

What is so spectral ?

Intuition and theory beyond spectral methods

Different interpretations and motivating applications

15:05–16:00

Do your own spectral mesh processing at home

Discrete Laplacian

Numerics for spectral analysis

Tutorial on implementation, OpenSource software for spectral analysis

16:00–16:15

Break

16:15–17:05
Zhang

Applications

Segmentation

Shape retrieval

Non-rigid matching

Symmetry detection

17:05–17:45
Levy

Applications

Shape characterization and the heat kernel

Quadrangulation, remeshing

Pareterization

17:45–18:00
Zhang & Levy

Wrapup, conclusions, Q&A

Courses

Wednesday, 16 December

The Look of "Up": A Filmmaker's Guide to the Pixar Process

14:15–18:00 | Level 5, Auditorium

An insider's look at the Pixar filmmaking process. If you enjoy Pixar films and have ever wondered how they are made, now is your chance. Presenters provide a behind the scenes look at the challenges, successes, and difficulties of creating the stylized world of Pixar's latest film, "Up".

One of the key challenges for this film was to balance the complexity of an imaginary world with the simplicity of stylized design. The hard part was to do it in a way that was both believable and in service to the story. This course provides a window into that process. It presents examples and experiences from several different areas of the production process, including characters, environments, lighting, and cinematography so attendees can learn how these teams operated and interacted with each other, and with the film's designers and directors, to create the look and feel of the film.

LEVEL
Beginner

PRESENTATION LANGUAGE
Presented in English

PREREQUISITES
An interest in film and animation is preferred. Bonus points if you've seen "Up"!

INSTRUCTOR(S)
Colin Thompson
Thomas Jordan
Patrick Lin
Pixar Animation Studios

14:15–16:00

Camera: Patrick Lin

– Static vs. Dynamic
– Camera Plan
– Camera Structure

Lighting: Andrew Pienaar

– Look Manifesto: Visual Goals
– Look Development and Diorama
– Lighting Style: Theatrical Simplexity
– Directing the Eye
– Shot Progression

16:00–16:15

Break

16:15–18:00

Characters: Thomas Jordan

Design Challenges

– Carl
– Russell
– Dug
– Kevin

Sets: Colin Thompson

– When to stylize
– Working with limitations
– Common design principles
– Examples

Courses

Thursday, 17 December

Introduction to Using RenderMan

9:00 AM–6:00 PM | Vantan Design Institute Yokohama Campus

This full-day course is an intensive, hands-on practical introduction to Pixar's RenderMan and its use with Maya. In the first part of the course, attendees gain sufficient familiarity with RenderMan's scene-description protocol to edit and manipulate RIB files. RIB files enable modeling and animation applications to communicate with a RenderMan-compliant renderer. The second part of the course introduces the use of the RenderMan Shading Language (RSL). The goal of this section is to provide an overview of the creative potential of the shading language so attendees can continue their own independent exploration of the shading language. During the final part of the course, attendees are introduced to alternate ways of using RenderMan with Maya.

Attendance for this course is limited to 32 attendees. Attendance is on a first-come, first-served basis. Attendees who are interested in this session are required to join a dedicated queue labeled Introduction to Using RenderMan at Level 1, Registration Counter, Pacifico Yokohama Convention Center. Special tickets will be issued beginning at 8:30, Thursday, 17 December. The first 32 attendees with registration badges in this queue will will receive tickets to attend the course. If you are hoping to attend this course, you are strongly advised to collect your registration badge the day before.

Student interns will provide directions to the Vantan Design Institute Yokohama Campus (a 10-minute walk from the Convention Center), where this course will be presented. Departure time is 8:30, Thursday, 17 December. Interested attendees must register at Level 1, Registration Counter, Pacifico Yokohama Convention Center to attend the course.

LEVEL
Beginner

PRESENTATION LANGUAGE
Presented in English

PREREQUISITES
No programming experience is required. Experience with Maya is advantageous but not required.

INSTRUCTOR(S)
Malcolm Kesson
Savannah College of Art and Design

Yosuke Katsura
OLM Digital, Inc.

9:00–10:45

SESSION 1
Malcolm Kesson

Rib Exercises

10:45–11:00

Break

11:00–12:45

SESSION 2
Malcolm Kesson

RSL Exercises

12:45–14:15

Lunch

14:15–16:00

SESSION 3
Malcolm Kesson

Point-Based Occlusion
Sub-Surface Scattering

16:00–16:15

Break

16:15–18:00

SESSION 4
Yosuke Katsura

RenderMan & Maya

Courses

Thursday, 17 December

Tips for Successful Voice Recordings for Anime and CG

9:00–10:45 | Room 511/512

How can you make your next narration recording as successful as possible? This course provides the tips and information you need for successful narration. Topics include: casting concerns, key director and actor frustrations, and how to communicate effectively in the director's chair.

LEVEL
Beginner

PRESENTATION LANGUAGE
Presented in English

PREREQUISITES
Previous recording experience would be helpful.

INSTRUCTOR(S)
Donna Burke
Chris Wells

9:00
Introductions

9:05
What can go wrong when producing voice-overs

9:25
Problems actors have with directors

10:00
5 minute break

10:05
Tips for eliciting better performances from voice actors

10:30
In Summary

10:35
Q & A

10:45
END

レンダリング用・ゲーム用キャラクターの同時制作ワークフロー

9:00–10:45 | Room 502

レンダリング用に制作したキャラクターコンテンツをゲーム用コンテンツに変換するのは困難である。このクラスでは、レンダリング用コンテンツをベースにゲーム用キャラクターを作成する方法を紹介します。今回の焦点は、リアルな高品質リアルタイム用キャラクターの作成です。キャラクター制作においてのコンセプト、モデリング、UV、テクスチャーペイント、プロジェクションペイント、高解像度モデル制作を紹介します。さらに、高解像度コンテンツをゲーム用にリダクションするプロセルを取り上げます。最後に、制作したキャラクターをゲームエンジンでのプリビューについて説明します。

レベル
中級

使用言語
日本語のみでの講演

事前確認事項
（コース内容を理解するに当り必要な聴講者の知識、アプリケーション分野、グラフィックス経験等）

ゲーム用のキャラクター制作経験、
Maya・Softimage・3ds Max
アプリケーションの知識

講演者名・所属
id Softwareリードアニメーター
原慎一郎

9:00–9:05
キャラクター制作前のプラン

9:05–9:35
キャラクターコンセプト

9:35–9:50
キャラクター３ｄコンテント制作

9:50–10:05
UV展開

10:05–10:20
テクスチャー

10:20–10:35
ゲーム用コンテント制作

10:35–10:40
レンダリング

10:40–10:45
Q&A

Courses

Thursday, 17 December

Exploring the Potential of Layered BRDF Models

9:00–10:45 | Room 513

The key advantage of using layered BRDFs over traditional, more general shading-language constructs is that the automatic result is highly plausible. This course is a survey of the considerable potential of layered surface models. On a simple layered surface model that combines several traditional BRDF components, it demonstrates how a surprisingly large number of interesting and important surface types can be efficiently represented by using the same, not particularly complex, BRDF code. It also shows how handy such an approach is for the eventual end user, whose main concern is the ease of describing object appearance based only on a few intuitive parameters.

The course begins with a discussion of layered surface models in computer graphics and the constraints of modelling object appearance in a physically plausible fashion, then demonstrates the techniques that can be used to efficiently evaluate layered BRDF models and presents examples of the surface types that can be described in this way. The course goes beyond plain-surface models to showcase how a texture-based combination of layered surface components can be used to describe highly complex object-appearance attributes, while implicitly remaining physically plausible.

LEVEL
Intermediate

PRESENTATION LANGUAGE
Presented in English

PREREQUISITES
A working knowledge of global illumination, physically based rendering, and reflectance modeling.

INSTRUCTOR(S)
Andrea Weidlich
Technische Universität Wien

Alexander Wilkie
Charles University in Prague

9:00–9:05
Alexander Wilkie
Welcome and Introduction

9:05–9:30
Alexander Wilkie
Layered Surfaces in Computer Graphics
BRDF Models
Comparison and Differences in Existing Techniques

9:30–10:05
Andrea Weidlich
Combining Individual BRDFs Into Layered Models
Arbitrarily Layered Micro-Facet Surfaces – Overview
Using the Approach in a Monte Carlo Image Renderer
RenderMan SL Implementation
Simplifications for Real-Time Rendering
Overall Performance in a Rendering System

10:05–10:20
Andrea Weidlich
Classifying Materials – Using Layered BRDFs to Describe Object Appearance
Material Appearance and Visual Clues
Classifying Materials According to the Reflection

10:20–10:45
Alexander Wilkie
Modelling with Layered Surfaces
Traditional Materials
Special Materials

Courses

Thursday, 17 December

コンピュータグラフィクスのためのスケッチインタフェース

9:00 AM–10:45 AM | Level 5, Auditorium

エンドユーザによるコンピュータグラフィクス(CG)製作のためのユーザインタフェースとしてスケッチインタフェースが注目を集めている。スケッチインタフェースを使うことによって、初心者でも簡単に表現力豊かなCGを作成することが可能となる。本コースでは、我々が開発してきたシステムを中心に、このようなスケッチインタフェースの例をいくつか紹介する。具体的には、スケッチによるモデリング手法、形状編集手法、アニメーション作成手法などを紹介する。当日は、これらの手法について、ライブデモンストレーションやビデオなどを交えて紹介する予定である。また、使いやすく効果的なスケッチインタフェースをデザインするために考慮すべき事項などについても議論する。

レベル
初級

使用言語
英語での同講演:12/18(金)

事前確認事項
(コース内容を理解するに当り必要な聴講者の知識、
アプリケーション分野、グラフィックス経験等)

主に、インタラクション手法の実例を、デモやビデオを
交えて紹介するものであるので、特に技術的な知識や
経験は特に必要ない。

講演者名・所属
JST ERATO 五十嵐デザインインタフェースプロ
ジェクト総括
東京大学大学院情報理工学系研究科
コンピュータ科学専攻 准教授
五十嵐 健夫

9:00–9:10
はじめに

9:10–9:20
2次元描画システム

9:20–9:40
3次元形状モデリング

9:40–10:00
形状変形手法

10:00–10:20
アニメーション生成手法

10:20–10:30
特定アプリケーション向けの手法

10:30–10:35
まとめ

10:35–10:45
質疑

Courses

Thursday, 17 December

Chiptune Marching Band

14:15–18:00 PM | Room 513

Note: This course is limited up to 20 people on a first-come-first-served basis.You'll present your instrument as a part of DIY Hardware at The Emerging Technologies exhibition before you bring it to your home. If you would like to be in the band, please sign up on site.

Chiptune Marching Band is an exploration of themes in resource use, creative culture, and ad-hoc community formation. It is a public workshop and performance for researchers, students, and the general public that has taken place in diverse international venues and events.

In the workshop, participants are led through a presentation on concepts and basic knowledge of localized power resources and energy micro-generation approaches, technical knowledge of audio circuits, and participatory performance practice through performative "happening". Then they receive a kit of parts and some assistance with circuit building and instrument fabrication. With step-by-step instructions, they build a sensor-driven sound-making circuit powered by human and environmentally friendly resources. For instrument fabrication, they personalize their instruments in whatever way they choose with provided materials.

Participants who finish the workshop discuss how to organize a public performance. Following the discussion, participants are organized into a "marching band" that parades through the streets as a public performance and spectacle. At the end of the march, participants take their instruments home.

LEVEL
Beginner

PRESENTATION LANGUAGE
Presented simultaneously in Japanese and English

PREREQUISITES
Curiosity about DIY culture, especially alternative power resources, going "off grid", and audio circuit building, as well as interest in performance and collaborative, creative actions ("happenings", for example). No technical or musical prerequisites. Open-minded, fun, and creative people of all ages and backgrounds are welcome to join the experience.

INSTRUCTOR(S)
Kazuhiro Jo
Newcastle University

Jamie Allen
Newcastle University

チップチューン・マーチング・バンド

14:15–18:00 PM | Room 513

※このコースは最大20名様までで先着順となります。制作した楽器はエマージングテクノロジーにおけるDIY Hardwareプロジェクトの一部として展示した後に持ち帰る事ができます。バンドに参加されたい場合はその場での登録をお願いします。

チップチューン・マーチング・バンド(CMB)では、資源の利用、創造的な文化、コミュニティの形成について学びます。研究者や学生だけでなく一般の様々な方々を対象とし、公開型のワークショップとパフォーマンスを行います。CMBはこれまで、世界各国の様々な国際会議やフェスティバルで実践を行ってきました。ワークショップでは、ディスカッションとプレゼンテーション、回路の組み立て、そして楽器の制作を行います。ディスカッションとプレゼンテーションでは、局所化された資源、マイクロエネルギーの生成、音を出す電子回路の基礎、および参加型の音表現、について学びます。回路の組み立てでは、あらかじめ用意された部品とステップ毎に記述された説明書にそって、人もしくは環境によるエネルギーを用いたセンサー駆動型の音生成回路を作ります。楽器の製作では、用意された素材を元に、思い思いに個々の楽器を創り上げます。ワークショップの終了後、どのように自分たちのパフォーマンスを構成するか参加者同士で話し合います。パフォーマンスでは、話し合いの結果を踏まえ、一つのマーチング・バンドとして会場の外へ出て、横浜の街を練り歩きます。パフォーマンスの終了後には各自の楽器は持ち帰ることができます。

レベル
初級

使用言語
日本語・英語両方での講演

事前確認事項
(コース内容を理解するに当り必要な聴講者の知識、アプリケーション分野、グラフィックス経験等)

DIY(Do It Yourself)の実践、特に代替エネルギー、音を出す電子回路、そして参加型の活動に興味を持つ方に最適なコースです。技術的な知識や音楽的な経験の有無は問いません。年齢・分野を問わず、好奇心と創造性にあふれた皆様の参加をお待ちしています。

講演者名・所属
英国ニューカッスル大学
カルチャーラボ・デジタルメディア客員研究員
城一裕

14:15–16:00	**14:15–16:00**
ディスカッション/ プレゼンテーション	Discussion/ Presentation
回路の組み立て	Circuit Building
16:00–16:15	**16:00–16:15**
休憩	Break
16:15–18:00	**16:15–18:00**
楽器の製作	Instrument Fabrication
パフォーマンス	Performance

Courses

Thursday, 17 December

Casting Shadows in Real Time

14:15–18:00 | Room 511/512

Shadows are crucial for enhancing realism, and they provide important visual cues. In recent years, many important contributions have been made in representation of both hard shadows and soft shadows. With the tremendous increase of computational power and capabilities of graphics hardware, high-quality real-time shadows are now a reachable goal. But with the growing volume of available choices, it is particularly difficult to pick the right solution and assess product shortcomings. Because currently there is no ideal approach available, algorithms should be selected in accordance with the context in which shadows are produced. The possibilities range across a wide spectrum, from very approximate but really efficient to slower but accurate, adapted only to smaller or only to larger sources, addressing directional lights or positional lights, or involving GPU or CPU-heavy computations. This course is a guide to better understanding of the limitations and failure cases, advantages and disadvantages, and suitability of the algorithms for different application scenarios. It focuses on real-time, interactive solutions but also discusses offline approaches.

LEVEL
Intermediate

PRESENTATION LANGUAGE
Presented in English

PREREQUISITES
Basic understanding of geometry and linear algebra. Some working knowledge of GPU programming is helpful for using the presented algorithms in practice, but the course is also informative for people with very basic GPU experience.

INSTRUCTOR(S)

Elmar Eisemann
Universität des Saarlandes

Max-Planck
Institut für Informatik

Ulf Assarsson
Chalmers University of Technology

Michael Schwarz
Max-Planck-Institut für Informatik

Michael Wimmer
Technische Universität Wien

14:15–14:25
Eisemann
Introduction
Part I: Hard Shadows

14:25–14:40
Assarsson
Basic Algorithms

14:40–15:35
Wimmer
Hard Shadows

15:35–16:00
Eisemann
Filtered Hard Shadows

16:00–16:15
Break

16:15–16:20
Schwarz
Part II: Soft Shadows
Soft Shadows: Introduction

16:20–17:00
Schwarz
Image-Based Approaches

17:00–17:20
Assarsson
Soft Shadows: Geometry-Based Approaches I – Soft Shadow Volumes

17:20–17:35
Eisemann
Soft Shadows: Geometry–Based Approaches II – View-Sample

17:35–17:45
Eisemann
Environmental Lighting

17:45–18:00
Conclusion and Questions

Courses

Thursday, 17 December

How to Plan a Short Film

14:15–18:00 | Level 5, Auditorium

This course shows how to identify the artistic requirements for a film production, how they drive the technical plan, how that drives the schedule and logistics, and finally how all of that drives the casting and deployment of resources. Each stage is illustrated with specific examples from three recent Pixar short films (all are Oscar nominees): “Boundin”, “One Man Band”, and “Lifted”.

LEVEL
Intermediate

PRESENTATION LANGUAGE
Presented in English

PREREQUISITES
Basic familiarity with modeling, shading, lighting, animation, etc.

INSTRUCTOR(S)
Bill Polson
Pixar Animation Studios

14:15–16:00
Polson

Introduction–View films: “Boundin”, “One Man Band”, “Lifted”

How schedules were created for these films

Create a schedule for an example film

16:00–16:15

Break

16:15–18:00
Polson

Resources & What If

Q & A from part 1

Resource planning (software, hardware, people)

Casting (people, with focus on skillsets)

Planning for problems

Androidでゲームを作りましょう！

14:15–16:00 | Room 502

この講演ではAndroid用ゲーム開発に関する基礎を紹介します。グラフィックス系Androidアプリケーションの仕組みを説明しながら、無料SDKやツールのみを利用してゲームを作成します。ゲーム制作時に役に立つOpenGL ESやタッチパネルの対応、加速度センサなどAndroidのAPIに含まれている機能を紹介します。Hello Worldのアプリケーションをベースとして、講演の間に遊べるゲームを作り上げます。

合わせて、講演では基礎的なAndroid開発についても説明する予定です。SDKのツール、API、基本クラス、プロセスのライフサイクル、イベント操作、スレッドなどについて紹介します。2D及び3Dの描画方法についても説明します。

レベル
中級

使用言語
日本語のみでの講演

事前確認事項
（コース内容を理解するに当り必要な聴講者の知識、アプリケーション分野、グラフィックス経験等）

基礎的なJavaに関する知識基礎的なOpenGLの知識があると尚良し。

講演者名・所属
日本グーグルデベロッパーアドボケイト
プルエット クリス

ANDROID開発の基本　20分

Android SDKやツールの紹介
AndroidのJava API
Android APIの基本クラスについて
アプリやプロセスのライフサイクル

アプリ開発方法　30分

入力イベント反応
スレッド対応
GCの特徴
高速なコードの技

グラフィックス描画に関するAPIについて　30分

2D 描画方法
Canvas
Open GL ES
3D 描画方法
OpenGL ES
OpenGL ESのエクステンションについて
ベンチマークテスト

まとめ　10分

アプリケーションの仕組み
UIのガイドライン
様々な画面、様々な解像度のサポート方法
様々な入力システムのサポート方法
Androidマーケットについて

質問時間　10分

Courses

Thursday, 17 December

iPhoneアプリケーション開発概要

16:15–18:00 | Room 502

iPhone およびiPod touchに搭載される、iPhoneOSは、最も先進的なモバイル機器用オペレーティングシステムです。このセッションでは、iPhoneOS向けアプリケーションのための開発環境から配信方法、および技術概要についてご紹介致します。特に技術概要については、iPhoneOSが提供するグラフィックス関係のテクノロジー、Core Animation, OpenGLES等を中心に説明します。

レベル

中級

使用言語

日本語のみでの講演

事前確認事項（コース内容を理解するに当り必要な聴講者の知識、アプリケーション分野、グラフィックス経験等）

iPhoneSDKとCocoa Touch等のiPhoneOSフレームワーク基礎知識があれば良し、当コース参加事前に、Appleデベロッパプログラムに登録する必要なし。

講演者名・所属

Apple

2:15 - 2:30pm

アプリケーション開発の流れ

2:30 - 3:00pm

アプリケーション開発環境の概要

3:00 - 4:00pm

グラフィックステクノロジーについて

Courses

Friday, 18 December

High-Dynamic-Range Imaging for Artists

9:00–12:45 | Level 5, Auditorium

An introduction and overview of the practical applications and uses of high-dynamic-range imaging (HDRI) from a production point of view. The course begins with a brief overview of HDRI and pre-production, production, and post-production techniques. Topics include: RAW converters, bit depths, RAW vs JPEG, the pros and cons of various panoramic HDR stitching applications, panoramic heads, shooting and working with chrome balls, creating Radiance files, and tips on shooting, tonemapping, cgi-HDR creation, semi-automating shooting, and post-postproduction techniques. The final section of the course presents practical examples of how HDRI is used in the motion picture and broadcast industries.

LEVEL
Intermediate

PRESENTATION LANGUAGE
Presented in English

PREREQUISITES
Familiarity with basic techniques in digital photography and/or basic computer graphics modeling and rendering. Familiarity with specific image-editing and 3D modeling and rendering packages would be helpful. Experience with basic compositing would also be helpful, but it is not required. Prior knowledge of HDRI techniques and terms would be beneficial.

INSTRUCTOR(S)
Christian Bloch
Eden FX

Kirt Witte
Savannah College of Art and Design

Kirt Witte and Christian Bloch

9:00–9:05
Witte

Introduction: Welcome and speaker introductions

9:10–9:30
Bloch

What is HDRI? Why do we need it? Demo of some immediate advantages in Photoshop CS4, Lightroom.

9:30–9:40
Bloch

File formats and modern options for creating HDRIs.

9:40–10:05
Bloch and Witte

Shooting for HDR:

Practical shooting advice.

10:05–10:20
Bloch & Witte

Shooting HDR panoras: methods, gear, lens choices

10:20–10:45
Bloch

Workshop demonstration:

HDR panora stitching workflow. Lightroom - - > Photomatix - - > PTGui Pro - - > Photoshop

10:45–11:00

Break

11:00–11:10
Witte

Shooting multi-bracketed shots with a Nintendo DS on Canon cameras

11:10–11:25
Witte

Tone mapping exples, (local versus global): Photoshop, Picturenaut, & Photomatix Pro

11:25–11:45
Witte

Alternative HDR panora stitching workflow: Autodesk stitcher

11:45–11:50
Witte

Creating CGI HDRI spherical panoras (Vue7)

11:50–12:00
Witte

Panoric photographic art–panoric conversions, panoric warping

12:00–12:15
Bloch

Image-based lighting: natural light, efficient setup, smart IBL, methods to maintain creative control and art direction

12:15–12:30

HDRI usage at EdenFX: Behind the scenes, practical application examples

12:30–12:45

Questions & Answers

Courses

Friday, 18 December

Crowd Animation: Tools, Techniques, and Production Examples

9:00–18:00 | Room 502

The tools and techniques for producing synthetic crowds for film, television, and video games continue to evolve as content creators realize the vast production value provided by crowd animation. By examining the use of crowd animation across several production pipelines at different studios, this course reveals various methods and solutions for animating, simulating, and rendering crowd animation. It presents an overview of the history and concepts of crowd animation, a review of the current state of the art in crowd animation, and some thoughts on the future of this growing field of computer graphics.

LEVEL
Intermediate

PRESENTATION LANGUAGE
Presented in English

PREREQUISITES
Familiarity with computer animation, rendering, and 3D concepts is helpful but not required.

INSTRUCTOR(S)
Craig "Xray" Halperin
ImageMovers Digital

Ken Anjyo
OLM Digital, Inc.

Mihai Cioroba
Digital Frontier Inc.

Paul Kanyuk
Pixar Animation Studios

Stephen Regelous
Massive Software

Takashi Yoshida
Digital Frontier Inc.

Marc Salvati
OLM Digital, Inc.

9:00–9:30
Craig "Xray" Halperin
Introductions and Background

9:30–10:30
Stephen Regelous
Massive

10:30–10:45
Q&A

10:45
Break

11:00–11:45
Takashi Yoshida & Mihai Cioroba
Massive in Production: It's not all Brains

11:45–12:45
Ken Anjyo & Marc Salvati
Crowd in Maya: Simple AgentBased Modelb

12:45–14:15
Lunch

14:15–14:45
Mihai Cioroba
A Custom Crowd–Animation System for "The War of Sekigahara"

14:45–15:30
Craig "Xray" Halperin
Crowds in Disney's "A Christmas Carol"

15:30–16:00
Paul Kanyuk
Crowds in "Ratatouille" (Part 1)

16:00–16:15
Break

16:15 –17:30
Paul Kanyuk
Crowds in "Ratatouille" (Continued)
Crowd Motion and Rendering for "Cars" and "Heavy Metal Mater"
Crowds in "WALL*E"
Crowds in "Up!"

17:30–18:00
Q&A with all presenters

Courses

Friday, 18 December

Predictive Rendering

9:00–6:00 | Room 513

This course intends to serve two closely related purposes: to provide an accurate definition of the term "predictive rendering" and to present the technological foundations for research in this area.

The first goal of the course (a clear definition of the term) seems to be necessary due to the extreme prevalence of its antonym: believable rendering. Practically all contemporary production graphics, as well as most current graphics research efforts, fall into the latter category.

The second (much larger and technical) part of the course presents the foundations of current predictive rendering. Unlike believable rendering, where any technology that delivers visually convincing results is acceptable for a given task, a predictive pipeline has the fundamental problem that all components have to be of a uniformly high quality to ensure a reliable result. The course describes an entire predictive pipeline, and for each stage it presents the graphics technologies (in some cases surprisingly few) that can be used in such a context.

This course should enable anyone with a background in graphics to bootstrap a basic predictive rendering environment that can support further research.

LEVEL
Advanced

PRESENTATION LANGUAGE
Presented in English

PREREQUISITES
Even though the course presents the state of the art in a fashion that is easy to follow, solid prior understanding of contemporary rendering technology (especially optics, the interactions of light and matter, stochastic rendering, and HDR display issues) is very beneficial.

INSTRUCTOR(S)
Alexander Wilkie
Charles University in Prague

Alan Chalmers
Warwick University

Andrea Weidlich
Technische Universität Wien

Marcus Magnor
Technische Universität Braunschweig

Kai Berger
Technische Universität Braunschweig

9:00–10:45

Introduction and Definition of the Problem

Stage 1 of the Predictive Rendering Pipeline

– Technical Basics of Predictive Light Transport Computations
Andrea Weidlich

– Predictive Reflectance Models, Part 1
Andrea Weidlich

10:45–11:00

Break

11:00–12:45

– Predictive Reflectance Models, Part 2
Andrea Weidlic

– Scattering Models
Kai Berger

– Modeling of Natural Phenomena
Kai Berger

12:45–14:15

Lunch

14:15–16:00

– Modeling of Natural Phenomena, Part 2
Kai Berger

Stage 2 of the Predictive Rendering Pipeline

– Unbiased Rendering Algorithms
Alexander Wilkie

Stage 3 of the Predictive Rendering Pipeline

– Spectral Image File Formats
Alexander Wilkie

16:00–16:15

Break

16:15–18:00

– Displaying Predictive Renderings
Alan Chalmers

Courses

Friday, 18 December

Camera Control in Computer Graphics: Models, Techniques, and Applications

9:00–12:45 | Room 511/512

This course summarizes the motivations and requirements for camera control, presents an overview of the state of the art, and examines promising avenues and hot topics for future research. It classifies the various techniques and identifies the representational limits and commitments of each. Approaches range from completely interactive techniques based on the possible mappings between a user's input and the camera parameters to completely automated paradigms in which the camera moves and jumps according to high-level, scenario-oriented goals. Between these extremes lie approaches with more limited expressiveness that use a range of algebraic and constraint-based optimization techniques.

The course includes a number of live examples from both commercial systems and research prototypes, and it emphasizes the tough issues facing application developers, such as real-time handling of visibility for complex multiple targets in dynamic environments (multi-object tracking).

LEVEL
Beginner

PRESENTATION LANGUAGE
Presented in English

PREREQUISITES
An undergraduate-level background in computer graphics.

INSTRUCTOR(S)
Marc Christie
INRIA Rennes Bretagne Atlantique

Patrick Olivier
Newcastle University

9:00–9:25

Introduction to camera control in computer graphics

Introduction of speakers

Course overview

Motivations for interactive and automated camera control

9:25–10:05
Marc Christie

Insights from Photography and Cinematography

10:05–10:45
Patrick Olivier

Interactive Camera Control

10:45–11:00

Break

11:00–11:40
Marc Christie

Automated Camera Control

11:40–12:20
Patrick Olivier

Handling Visibility

12:20–12:45

Discussion

Trends and open issues

Questions and answers

Courses

Friday, 18 December

Sketching Interfaces for Computer Graphics

16:15–18:00 | Level 5, Auditorium

Sketching interfaces are emerging as an alternative authoring method for computer graphics. They allow casual users to create meaningful 3D models and animations quickly without intensive training. This course introduces several sketching systems for computer graphics authoring developed by the presenter as well as some notable systems developed by others. Using live demonstration and videos, the course presents various sketch-based techniques such as geometric modeling, deformation, and animation authoring, and summarizes important issues that should be considered in design of successful sketching interfaces.

LEVEL
Beginner

PRESENTATION LANGUAGE
Presented in English.
Also presented in Japanese on Thursday.

PREREQUISITES
None

INSTRUCTOR(S)
Takeo Igarashi
The University of Tokyo/JST ERATO

16:15–16:25
Introduction

16:25–16:35
2D techniques

16:35–16:55
Modeling methods

16:55–17:15
Deformation methods

17:15–17:35
Animation authoring methods

17:35–17:45
Domain–specific techniques

17:45–17:55
Summary

17:55 –18::00
Questions and Answers (5 min)

Courses

Saturday, 19 December

CGAL: The Computational Geometry Algorithms Library

9:00–12:45 | Room 513

The CGAL C++ library offers geometric data structures and algorithms that are reliable, efficient, easy to use, and easy to integrate in existing software. Use of de facto standard libraries like CGAL increases productivity, because they allow software developers to focus on the application layer.

This course is an overview of CGAL geometric algorithms and data structures.

The lectures cover:

• CGAL for 2D vector graphics, including Boolean operations on Bézier curves, offsets, simplification, and geometry on the sphere.

• CGAL for 3D point sets, including principal component analysis, bounding volumes, simplification, outlier removal, normal estimation, normal orientation, denoising, triangulation, and surface reconstruction.

• CGAL for mesh-based modeling and processing, including Boolean operations, convex decomposition, simplification, and parameterization.

• CGAL for mesh generation, including surface and volume mesh generation, from 3D images, implicit functions, or polyhedral surfaces.

The introductory lecture covers non-geometric topics: the exact geometric computing paradigm that makes CGAL reliable without sacrificing efficiency and the generic programming paradigm that facilitates integration into existing software.

LEVEL
Intermediate

PRESENTATION LANGUAGE
Presented in English

PREREQUISITES
Knowledge of algorithms and data structures related to the field of computational geometry and knowledge of C++ and C++ templates are helpful but not necessary.

INSTRUCTOR(S)
Andreas Fabri
Geometry Factory

Pierre Alliez
INRIA

9:00
Fabri

General Introduction (project, generic programming, exact computing)

9:35
Fabri

CGAL for 2D Vector Graphics

– Boolean Operations on polygons, and Bézier curves.
– Polygon offset: Minkowski or straight skeleton-based.
– Topologicaly correct polyline simplification.
– Geometry on the sphere

10:10
Alliez

CGAL for Point Set Algorithms

– A surface-reconstruction pipeline
– Outlier removal
– Curvature estimation
– Point-cloud smoothing
– Poisson and APSS surface reconstruction

10:45

Break

11:00
Fabri

CGAL for Modeling and Processing of Polyhedral Surfaces

– The halfedge datastructure and Euler operations
– Algorithms: Intersection detection, bounding volumes, Boolean operations kernel, parametrization, subdivision, simplification, ridge extraction, principal curvature analysis

11:45

Alliez CGAL for Mesh Generation

– 2D and 3D Delaunay triangulations
– Delaunay refinement and filtering
– 2D mesh generation: from constrained triangulations to quality meshes
– 3D surface mesh generation
– 3D tetrahedral mesh generation

12:30

Conclusion and Q & A

Courses

Saturday, 19 December

Scattering

9:00–12:45 | Room 511/512

Most computer-generated imagery represents scenes with clear atmospheres, neglecting light scattering effects. But scattering is a fundamental aspect of light transport in a wide range of applications, whether one is simulating it or interpreting it, from medical imaging to driving simulators or underwater imagery. This course addresses the challenges associated with light scattering in a computer-graphics context. The field has seen great advances over the past few years, but most of the existing algorithms still assume that light emitted by a source or reflected off a surface reaches the sensor unaltered. This is due mainly to the complex interactions that occur and the high computational costs of simulating them. Scattering effects are one fundamental hurdle that must be overcome to significantly extend and enhance current state-of-the-art graphics techniques and achieve successful effects in a wide range of domains. This course is designed to increase awareness about this area and reveal new research directions.

LEVEL
Intermediate

PRESENTATION LANGUAGE
Presented in English

PREREQUISITES
No specific knowledge of scattering is required, although basic knowledge of general 3D computer graphics and vision terms and techniques is assumed. A corresponding mathematical background is also helpful.

INSTRUCTOR(S)
Diego Gutierrez
Universidad de Zaragoza

Henrik Wann
Jensen University of California, San Diego

Wojciech Jarosz
Disney Research Zürich

Craig Donner
Columbia University

9:00–9:15
Diego Gutierrez
Welcome and Introduction

9:15–9:55
Wojciech Jarosz
Rendering Scattering Media

9:55–10:20
Wojciech Jarosz
Efficient Rendering

10:20–10:45
Diego Gutierrez
Inelastic Scattering

10:45–11:00
Break

11:00–11:30
Henrik Wann Jensen
Scattering Materials

11:30–12:00
Craig Donner
Rendering Human Skin

12:00–12:30
Henrik Wann Jensen,
Craig Donner
Acquisition and Measurement

12:30–12:45
Wrap up and Discussion

Courses

Saturday, 19 December

Creative Collaboration: Effective CG Pipelines Any Size, Any Place

9:00–12:45 | Room 502

With the explosive growth in the number of digital artists, there is an increasing opportunity to capture the creative potential that is currently devoted to creating user-generated content. This course provides a foundation for planning CG projects that typically start as small collaborations and later become to large productions. It examines the criteria for constructing and quickly deploying a simple pipeline for the initial collaboration and then proceeds step by step to scale up the pipeline to support hundreds of people.

At each step, the course examines the issues that limit efficiency and productivity. it addresses the decision points and potential problems in structure, organization, and pipeline as a production grows. It also explores the constituency of a distributed team and how it can be better organized and managed.

This course takes a systems approach to deconstructing projects at different scales and understanding the infrastructure requirements. The goal is to give course attendees the ability to create effective, self-organized projects that will easily scale with minimal cost and maximum efficiency.

LEVEL
Beginner

PRESENTATION LANGUAGE
Presented in English

PREREQUISITES
None

INSTRUCTOR(S)
Richard Chuang
David (grue) DeBry
Michael A. Chang
Cloudpic Global

9:00–9:30

Scaling your studio

9:30–10:15

Growth Models and Resource Scaling

– Centralized
– Semi-Distributed
– Fully Distributed

10:15–10:45

Case Studies

– Centralized
– Semi-Distributed
– Fully Distributed

10:45–11:00

Break

11:00–11:15

Post-Break Summary

11:15–11:50

Scaling Studio Processes in Different Growth Models

11:50–12:30

Scaling Project Management in Different Growth Models

12:30–12:45

Wrap-Up and Q&A

Courses

Saturday, 19 December

Visual Media Retargeting

14:15–18:00 | Room 513

The increasing variety of commonly used display devices, especially mobile devices, requires adapting visual media to different resolutions and aspect ratios - a process called “retargeting”. The media retargeting problem is further accentuated by the explosion of image and video content on the web.

This course presents a comparative overview of the latest research in visual-media retargeting. It focuses on content-aware approaches, which, contrary to traditional scaling and cropping, adapt to the salient information within the image or video and rescale the content while preserving visually important information. Topics include:

• Algorithmic details and practical considerations of the retargeting pipeline, including its two main parts (saliency estimation and resizing operators).

• Recent trends in retargeting operators, namely discrete graph-based approaches, also known as seam carving.

• Continuous methods that operate by image and video warping.

• Temporally coherent video retargeting and multi-operator frameworks.

The course illuminates the theoretical foundations and practical issues involved in media retargeting, and provides attendees a comprehensive understanding of the state of the art. It includes many live demos of the various resizing techniques.

LEVEL
Intermediate

PRESENTATION LANGUAGE
Presented in English

PREREQUISITES
Knowledge of basic graphics (pixels, video, color), basic mathematics (calculus: functions, derivatives, gradients; algebra: linear systems, minimization), and basic algorithms (graphs, nodes, edges, minimal path).

INSTRUCTOR(S)
Ariel Shamir
Efi Arazi School of Computer Science

Olga Sorkine
Courant Institute of Mathematical Sciences

14:15–14:25
Introduction

14:25–15:00
Sorkine
The retargeting frework

15:00–15:15
Shir
Simple retargeting operators

15:15–16:00
Shir
Se carving

16:00–16:15
Break

16:15–17:15
Sorkine
Retargeting by warping

17:15–17:45
Advanced topics and outlook

17:45–18:00
Wrap-up
Further discussion and questions

Courses

Saturday, 19 December

ゲームのための実践的な剛体物理シミュレーション –安定化、高速化、および並列化について–

2:15 PM–4:00 PM | Room 511/512

ビデオゲームなどでの利用を目的とした、剛体物理のリアルタイムシミュレーションに関するチュートリアルです。シミュレーションの高速性と安定性という2つの要件をどのように達成するかを実践的な側面から解説します。近代的な物理エンジンでは繰り返し解法が標準技術となっているため、安定化と高速化は表裏一体のものであるという視点から、より少ない繰り返し回数でシミュレーションを安定させる技術に焦点を当てます。SIGGRAPHやGDCでの最新の知見を紹介した後、私たちが開発したより効率的な改良手法について解説します。さらに、最新のゲーム機では処理の並列化が必須技術となっています。HPCの分野で培われた並列化技術がゲーム用のエンジン開発にどのように応用できるかについて実装例を交えて解説します。自社開発した物理シミュレータによるデモを通して、既存手法および私たちが開発した改良手法それぞれの有効性を検証していきます。

レベル
中級

使用言語
日本語のみでの講演

事前確認事項
(コース内容を理解するに当り必要な聴講者の知識、
アプリケーション分野、グラフィックス経験等)

初等物理、線形代数、微積分および微分方程式に関する基礎知識。高度な数値シミュレーションの知識は必要
ありません。

講演者名・所属
株式会社コーエー 技術支援部
シニアエキスパート
津田順平

2:15–2:40

基礎知識

– 拘束ベース法
– インパルスベース法
– 繰り返し解法

2:40–3:15

高速化および安定化技法

– 許容貫通誤差、行入れ替え、
Warm Start
– Shock Propagation
– 重さ増幅法
– 積極的スリープ
– デモ

3:15–3:50

並列化技法
– 多色順序付け(代数的および
グラフ的アプローチ)
– セル状順序付け
– デモ

3:50–4:00

質疑応答

Courses

Saturday, 19 December

Keeping Your Money On The Screen & Off The Floor

14:15–18:00 | Room 502

The global animation industry is as competitive as ever, with merciless markets, unforgiving audiences and miniscule profit margins. Yet independent and major productions alike seem content to burn through money (and people) as though they have resources to spare. Amazingly, this waste is not only pervasive, it is accepted. Not only is this irresponsible, it is unsustainable. It is also easily addressed through clear-minded assessment and informed action.

This course squarely addresses common production motivations and pitfalls. It examines the human factors and organizational considerations that are the foundation of all production (dys)function. It proceeds to cover workflow considerations and strategies, the establishment (and erosion) of balance, common heuristic assumptions and errors, and the importance of clarity and adaptation within the studio environment. A series of "Golden Rules" for production segues into the characteristics of a balanced pipeline and an overview of a flexible and robust nonlinear production pipeline. Finally, asset management is reviewed with an eye towards organization, flexibility, and transparency.

The presentation concludes with a micro/macro view on the production paradigm and synergistic orchestration of these parts into a practical yet transcendent whole.

LEVEL
Intermediate

PRESENTATION LANGUAGE
Presented in English

PREREQUISITES
A working knowledge of common animation and effects production practices for feature films, games, and other large-scale projects. No previous production experience is necessary.

INSTRUCTOR(S)
Kevin Geiger
Animation Options

14:15–14:20
Welcome

14:20–14:25
Introduction

14:25–15:10
Human Factors
Organizational & Team Balance
Human Resources & Stresses
Leadership Considerations

15:10–16:00
Production Principles
Workflow Considerations
Strategy, Balance & Breakdown
Heuristic Pros & Cons
"Golden Rules"

16:00–16:15
Break

16:15–17:30
Production Pipeline
Balance Factors
Non-Linear Production Pipeline Overview
Asset Management
Departmental Examples

17:30–17:40
Conclusion
Part Reflects Whole (Micro/Macro)
Orchestration

17:40–18:00
Group Discussion, Q&A

Courses

Saturday, 19 December

Biophysically Based Appearance Models: The Bumpy Road Toward Predictability

16:15–18:00 | Room 511/512

This course addresses practical issues involved in the development of biophysically based appearance models. Because these models are used not only in computer graphics, but also in other scientific applications (for example, noninvasive diagnosis of medical conditions and remote sensing of natural resources), the course also aims to foster cross-fertilization with these fields.

The course begins by providing a concise biophysical background and discussing the key concept of predictability. It continues by examining the specific constraints and pitfalls found in each of the key stages of the simulation framework (data collection, modeling, and evaluation) and discussing alternatives that could improve the fidelity of the entire process.

Once a model is designed, implemented, and evaluated through a sound methodology, its scope of applications can be expanded to address a wide range of scientific questions. For example, computer simulations are regularly being used by life science researchers to understand and predict material-appearance changes prompted by mechanisms that cannot be fully studied using traditional experimental procedures. The course closes with an examination of recent examples of computer graphics appearance models that can also be employed in such interdisciplinary research efforts.

LEVEL
Advanced

PRESENTATION LANGUAGE
Presented in English

PREREQUISITES
Familiarity with basic optics concepts and radiometric terms. Attendees should have a working knowledge of standard rendering techniques and terminology. Experience with Monte Carlo methods is helpful but not required.

INSTRUCTOR(S)
Gladimir Baranoski
University of Waterloo

16:15–16:20
Introduction

16:20–16:30
Biophysical Background
Light and Matter Interactions
Measurement of Appearance

16:30–16:40
Quest for Predictability
What does it mean?
Why is it useful?
How it can be attained?

16:40–17:00
Data Availability
Characterization Data Constraints
Evaluation Data Constraints

17:00–17:20
Modeling Issues
What's the appropriate level of abstraction?
Simplifying Assumptions
Unsound Generalizations

17:20–17:40
Evaluation Approaches
Visual Inspection
Collateral Comparisons
Comparisons with the "Real Thing"

17:40–17:55
Scientific Prospects

17:55–18:00
Concluding Remarks

Courses Committee

CHAIR

Tony Apodaca
Pixar Animation Studios

JURY

Bernard Edlington
Nexus International

Ivan Poupyrev
Sony CSL

Jun Saito
SEGA Visual Engineering

Larry Gritz
Sony Pictures Imageworks

Natasha Tatarchuk
Bungie

Veronica Sundstedt
Trinity College Dublin

Educators Program: Education Papers

Thursday, 17 December

ゲーム

(日本語による発表、英語による同内容の発表有り)

9:00 AM–10:00 AM | Room 416/417

SESSION CHAIR
青木美穂
Miho Aoki

産学連携によるゲーム開発の実践的教育カリキュラムの構築

近年ゲーム開発の高度化に伴い、専門的な知識と広い分野への横断的な知識が必要になった。これと併せて欧米ではゲーム教育を実施する大学が増加してきた。また産業界との連携も密であり、IDGAによるゲーム教育カリキュラムフレームワークも構築されている。

ゲームは、漫画やアニメとならび日本を代表する国際的な知的制作物であり、海外からも高く評価されている。これまで高等教育機関においてゲーム制作に関する一貫した教育カリキュラムは無く、その教育手法の開発についてゲーム産業からも強く要望されてきた。しかしながら、本プロジェクトを開始する時点では、日本国内にはゲーム開発を教育する4年間の学部カリキュラムは存在していない。そのため、教育手法や制作手法の体系化が遅れ、企業は各社ごとに独自の制作スタイルをとってきた。このことは制作手法の秘密化を招き、産学連携を困難にしてきた。現状では、企業の開発スタッフの一部が非常勤として専門学校等で教育することにとどまってしまっている。

東京工科大学では、株式会社プレミアムエージェンシーと共同で、開発現場で要求される、実践的な能力の育成を目指すカリキュラムを構築した。講義と演習を組み合わせた、従来の学部のカリキュラムに、1年から4年まで一貫したゲーム関連の授業を実施し、プログラミングやCG、企画など広い分野を経験、理解した学生を育成している。

東京工科大学
三上浩司、渡辺大地、伊藤彰教、川島基展、竹内亮太、近藤邦雄、金子満

株式会社プレミアムエージェンシー
山路和紀、小澤賢侍

An Innovative Game-Creator Development Project in the Asian Region

近年、アジア地域でのゲーム開発者育成のニーズが急速に高まっている。中国ゲーム産業においては、2005年に37億元だったオンラインゲーム市場における売上高が、2007年には約79元、2010年には172億元と右肩上がりの成長が予測されている。日本のキャラクターなどのデザインが受け入れられる嗜好であることからも、日本のゲーム開発企業にとって、中国やアジア諸国は、非常に魅力的な市場である。中国本土をはじめ、香港、台湾や、シンガポールなどにおいては、政府主導でのさまざまなゲーム産業振興および人材育成政策が模索されている。

しかし、ゲーム開発はヴィジュアルアーティストだけでなく、プログラマーやゲームデザイナー(プランナー)の連携による総合芸術であり、高度なIT技術が不可欠であるため、これらの地域におけるソフトウェア開発人材やクリエイターが未だ不足している。加えて、現状では質の高いコンテンツを生み出す技術力を教育するための人材および教育環境が不足している。

本取組は、そうした状況を踏まえて、日本においてこれまで培われたコンソールゲームコンテンツの制作技術を、実践的なトレーニングを通じてアジア地域に伝授するものである。本論文では、筆者らが香港にて実施したゲームクリエイター育成プログラムであるDigital Contents Creation Camp (以下 DCCC) の取り組みについて述べる。

株式会社プレミアムエージェンシー
川島基展、山路和紀、高橋鮎美、カクカンカン、村瀬浩太

株式会社 ソニー・コンピュータエンタテインメント
金澤克彦

Educators Program: Education Papers

Thursday, 17 December

Animation

2:15 AM - 4:00 PM | Room 414/415

SESSION CHAIR
Steve Cunningham

Educating Technophile Artists: Experiences From a Highly Successful Computer Animation Undergraduate Program

In the past few decades, the arts have become increasingly dependent on and influenced by the development of computer technology. In the 1960s, pioneering artists experimented with the emergent computer technology, and more recently the majority of artists have come to use this technology to develop and even to implement their artifacts.

The traditional divide between art and technology has been breaking down to the extent that many artists consider themselves technophiles. In truth, this divide has never existed. Throughout history, artists have always used and exploited available technology and frequently led the development of new technology that would allow them to express their creativity. For instance the ancient Greek word for art was “techni”, the root for the word “technology”.

The artificial and harmful divide between the arts and sciences was introduced in the western educational system in the 19th century, and it is high time that it was bridged or removed altogether. To this end, the National Centre for Computer Animation at Bournemouth University has pioneered a number of university degrees that aim to blur the difference between artists and scientists and technologists. This paper explores the design of such courses and shares experiences, successes, and trials and tribulations in implementing degrees in computer animation, games, and digital effects.

Peter Comninos
Leigh McLoughlin
Bournemouth University

Eike Anderson
Coventry University

Teaching Animation in Computer Science

The main functionalities of open-source software are now similar to the functionalities of commercial software, but the open-source community provides very valuable documentation, examples, and tutorials, at little or no cost. For these reasons, Blender software was selected to support an animation course for computer-science students.

As undergraduates, students began by using OpenGL in a computer-graphics course. Later, during their masters studies, the students took the animation course, where they learned the main modeling and animation techniques. Production of an animated film involves several steps, but some of them are not taught in this animation course. Its focus is more technical than artistic, in particular modeling and animation techniques. Nevertheless, the films revealed each student’s skill as a director, a producer, an editor, and animator, etc.

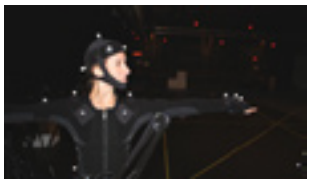
Blender is an excellent choice for 3D creation. It is a good tool for learning, especially for topics such as modeling and animation techniques, and it is the only software that supports all the technical steps of film production.

Frutuoso Silva
Universidade da Beira Interior

Educators Program: Education Papers

Thursday, 17 December

Developing Practical Models for Teaching Motion Capture



Motion-capture technology is increasingly used across a range of digital moving image practice, from 3D animation, digital visual effects and gaming to digitally augmented live performance and dance. This paper presents a range of preliminary pedagogical and research issues that have arisen at the early stages of developing teaching modules around the use of low-cost, entry-level motion-capture technology at the School of Art and Design, Auckland University of Technology. The motion-capture system is Optitrack's economical eight-camera optical motion-capture package. This initiative represents a first step in integration of motion capture within an existing digital-moving-image program and was conceived to address of a number of core pedagogical and research aims in 3D animation, performance, and motion capture.

At this stage, the pedagogical aims are focused on two areas:

1. Character animation: the use of motion capture as an aid for teaching animated performance and exploring the relationship between classical animation principles and motion-captured movement.

2. Developing director and performer skill sets. How to direct and perform effectively with motion capture for shifting project and performance mode requirements.

Within these particular fields, a number of issues arise: questions of motion capture versus classical animation technique, stylised or exaggerated versus naturalistic performance modes, motion-captured movement applied to stylized character models and/or photo-realistic models, the translation from "live" to digital movement, and the digital processing of performance.

Gregory Bennett
Andrew Denton
Auckland University of Technology

The Seduction of Realism

A prime goal of animation is the "illusion of life", which requires an illusion of reality. Though realism can be described in many ways, the overall aim is to give the animation some real-world authority that fulfills the illusion and increases immersion for the viewer. Traditionally, animation has often been represented through real-world informed movement, which is often stylistically exaggerated. Exaggerated character movement is drawn from real life, creating a poetic explicitness that increases the perception of movement and the life of the character. This exaggeration of motion compensates in some ways for the otherwise unreal nature of the animation medium.

In recent years, with the advent of computer-generated 3D animation, more convincing visual realism has become achievable. Though the exaggerated styles of traditional animation are often maintained, the unique qualities of the digital 3D medium provide an extra layer of visually convincing realism. One interesting consequence is that as realism increases, exaggerated movement and artistic interpretation decreases. The ultimate solution suggests absolutely realistic rendering, with absolutely realistic movement. Is this still animation, or is it something else? Is it still an expressive and creative medium?

The realism that technology provides for animators also creates new demands for educators. Should educators stay with the founding principles? How do educators embrace technology while retaining the expressive individuality that animation can provide. Should they adopt the new media, such as digital sculpting and hyper-realism? And when does new technology create new areas that have little to do with the definition of animation?

This paper discusses new expectations of realism in animation education, and via a journey down the Uncanny Valley, suggests some approaches and philosophies that can move with technology while retaining artistic independence and actively managing the seduction of realism.

Gray Hodgkinson
Massey University

Educators Program: Education Papers

Thursday, 17 December

Games

4:15 PM–6:00 PM | Room 414/415

SESSION CHAIR
Miho Aoki

Effects of Culture on Pre-Production Design of The HIV Game

This paper discusses the pre-production design process of The HIV Game, a serious interactive game with cultural and socio-technological implications for young people in the Yucatan. The activity involves conception of mystical characters, environments, and gameplay, along with development of pre-production assets, a movie trailer, and a clickable medium-fidelity prototype for testing.

Students at Purdue University's IDeaLaboratory are in the process of researching, designing, and developing the 2D animation game, which will be delivered via the internet in cyber cafés set up in four third-world villages in the Yucatan. The design process combines knowledge and measures from user-centered design, serious play theory, socio-technology, cultural implications, interactive media design, gaming, usability engineering, healthcare, and cognitive learning. While none of these areas is new, in combination they represent a novel approach to understanding and developing new ways of using interactive media to measure and change healthcare behavior of people living with HIV/AIDS in the Yucatan, and to prevent future spread of the disease. Demographic research on the Mayan culture and a perceptions-of-technology survey conducted in the summer of 2008 were used for the foundation of the pre-production design of The HIV Game.

In 1984, Ryan White of Kokomo, Indiana, was expelled from school because he was diagnosed with an HIV infection from a contaminated blood treatment he received as a hemophiliac. At the time, AIDS was associated with the male homosexual community, since that is where the disease was originally diagnosed. Even though physicians said White posed no risk to others, the people in the Indiana community feared a disease they did not understand and did not want their children exposed to. It seems appropriate that The HIV Game should originate in Indiana as a tribute to Ryan White.

The overall goal of The HIV Game is an engaging, interactive, serious online game that can modify the behavior of youths around the world to improve the quality of their lives.

La Verne Abe Harris
Nicoletta Adamo-Villani
Purdue University

Voyage to the Age of the Dinosaurs: An Experiential Learning Situation With Undergraduates, Graduates, and Visiting Professionals

This project provides an opportunity for undergraduates from Nanyang Technological University's School of Art, Design and Media to acquire and practice skills on study programs and apply what they have learned within a predominantly research-oriented environment interspersed with spans of activity they would normally experience after graduation. The research phase of the project focuses on the feathered nature of dinosaurs in the early Cretaceous period. Students investigate material related to the dinosaur species and the likely terrains, plants, and other organisms present at that time. They also have the opportunity to interact with visiting expert paleontologists, educators, and computer scientists who are collaborating partners on the project.

Mark Chavez
Nanyang Technological University

Educators Program: Education Papers

Thursday, 17 December

Construction Trial of a Practical Education Curriculum for Game Development Through Industry-University Collaboration

In recent years, a wide and deep knowledge of game-development procedures has been necessary in order to stay abreast of advancements in game technology. Researchers at the Tokyo University of Technology have designed a curriculum in collaboration with Premium Agency, Inc that aims to offer training in the practical aptitudes that are required in the game industry. The traditional curriculum has been augmented with lectures and exercises in a game-development context. As a result, more students are acquiring knowledge by consistently attending lectures and gaining experience in a wide range of specializations such as programming, CG, and planning.

Koji Mikami
Taichi Watanabe
Tokyo University of Technology

Katsunori Yamaji
Kenji Ozawa
Motonobu Kawashima
Premium Agency K.K.

Akinori Ito
Ryota Takeuchi
Kunio Kondo
Mitsuru Kaneko
Tokyo University of Technology

An Innovative Game-Creator Development Project in the Asian Region

In recent years, there has been a shortage of talented game creators in Asia, because game development requires complex collaboration among visual artists, game programmers, and game designers (planners). Students need to acquire a high level of computer and creative skills, and learn how to combine technical and artistic processes. This paper introduces Digital Content Creation Camp, a program that uses console-game production technologies cultivated in Japan to expand development of game creators throughout the Asia-Pacific region.

Motonobu Kawashima, Katsunori Yamaji, Guanguan Hao, Kota Murase, Ayumi Takahashi
Premium Agency, Inc.

Katsuhiko Kanazawa
Sony Computer Entertainment Asia, Inc.

Educators Program: Education Papers

Friday, 18 December

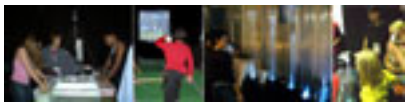
CGとインタラクティブ技術の教育への応用

（日本語による発表、英語による同内容の発表有り）

9:00 AM–10:30 AM | Room 416/417

SESSION CHAIR
近藤左千子
Sachiko Kondo

グループワークを用いたVRコンテンツ制作の教育法



VRコンテンツの制作は、CGやセンシング技術ばかりでなく、美的感覚やストーリー構築など、多方面に及ぶスキルを必要とする。このような多くのスキルが必要とされるプロジェクトの運営には、各人の持てる力を最大限に生かしながら協働する必要があるため、グループワークの手法が適していると考える。また、学生はグループ討論やフィールドワークなどのグループワークに積極的に参画することで、効果的に学習できるばかりでなく、コラボレーション能力も同時に磨くことができる。本発表では、グループワークを用いたVRコンテンツ制作の教育法を具体例を多数示しながら、その利点を紹介する。

北陸先端科学技術大学院大学
アイデアマラソン研究所
宮田一乗、梅本勝博、樋口健夫

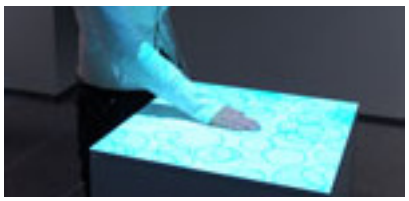
芸術と先端技術によるコンテンツ表現への試み —若冲が描く花と生き物たちの世界—

本研究では、人文系研究者・学生自身による研究教育活動のための高精細デジタル映像システムの可能性を検討する。例として制作したコンテンツは絵画作品の新しい見方を目指し、従来の単純なビジュアライゼーションではなく、絵画の中に入る没入型仮想空間コンテンツ試作を伊藤若冲の絵を用いて行った。文化財や芸術作品の分析・理解に対し、等身大以上のディスプレイの前で議論を可能とするコンテンツを用いることによって、芸術学・心理学・認知科学など様々な分野での共同研究が可能になると考えている。

筑波大学図書館情報メディア研究科
金 尚泰、西岡貞一

筑波大学芸術研究科博士前期過程
若杉さえ子

Sensory Interactionのための教育プログラム



コンピュータや映像・音響装置、センサやI/Oモジュールなどのメディア・テクノロジーを用いた表現が、従来の造形芸術とは異なる新しい美の位相をもたらした。インタラクティヴアートと呼ばれる分野の作品は、鑑賞者の行為に対する映像や音声のフィードバック、つまりフィジカル・インタラクションをもち、感覚的経験を導く。本研究は、そのようなメディア・テクノロジーがもたらした表現の特性に注目し、そこに使われる技術や造形要素、行為と感覚の関係の抽出を通じて、メディア造形教育とでも呼ぶべき基礎的な教育プログラムの構築を試みる。

デジタルコンピューティングにおける入力→プログラムによる処理→出力というデータフローは、鑑賞者と作品とのインタラクティヴな関係性を実現する鍵となる技術である。センサとI/Oモジュールを使えば、たとえば叩く、撫でる、押す、吹く、囁くといった人の行為を入力とし、それにインタラクティヴな関係性をもつ出力を生みだすコンテンツが実現する。本研究では、電子工学等の知識がなくても容易にプロトタイプの制作を可能にするツールキットと、それを使った教育プログラムを開発した。

画家が絵画制作の前段階において行うデッサンや習作を通じて、光や色彩、形態や質感などの感性的次元を獲得するように、メディア・テクノロジーを前提とする感性的次元を探る方法を、初習者向けの基礎的な教育プログラムとして実現することを目指す。

同志社女子大学学芸学部情報メディア学科
有賀妙子、森公一

Educators Program: Education Papers

Friday, 18 December

Visualization & Virtual Reality

11:00 AM–12:00 PM | Room 416/417

SESSION CHAIR
Mark Chavez

Who is on My Team: Building Strong Teams in Interdisciplinary Visualization Courses

While it seems that interdisciplinary collaboration in a visualization course is (theoretically) a very good idea, the practical application is problematic. In a single-semester course, students need to find project partners in a group of students they do not know at all, establish a "common ground" with their new partners, and create an expressive and effective solution to a visualization problem. This paper reports on a one-semester course given to 48 interdisciplinary students (29 computer science, 14 business-information systems, five non-technical), the strategies chosen to support interdisciplinary collaboration, and expectations and feedback on the collaboration as experienced by the students.

Gitta Domik
Universität Paderborn

An Educational Method for VR Content Creation Using Groupwork

VR content creation is a complex activity, and it requires a variety of skills, from sensing technology and computer graphics techniques to aesthetic design and storytelling. A groupwork-based project is a suitable approach for creating a VR application, because individual members can exert their full powers in their special fields by collaborating with each other.

This paper introduces and demonstrates the advantages of an educational method for creating virtual reality content through groupwork.

Kazunori Miyata
Japan Advanced Institute of Science and Technology

Educators Program: Education Papers

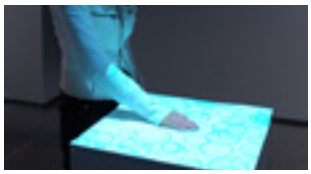
Friday, 18 December

Design

2:15 PM–4:00 PM | Room 416/417

SESSION CHAIR
Mei-Fen Chen

Learning Course for Sensory Interaction



Expressive methods of using media technologies such as computers, digital videos, sensors, and I/O modules have brought about a new phase in art and design. In interactive arts, artworks include feedback on images and audio that responds to viewers' actions. Interactivity is a crucial element for a broad range of studies, including software interface design, product design, and media art, because it produces new relationships between human and things. Students of media art, design, and human science should foster their ability to create and comprehend expressions based on interactivity created by media technology. This preliminary course was developed to meet that need.

Course materials include a white wooden box for exhibition and toolkits for creation. The box (50 x 50 x 80 centimeters) works as an interface. It is placed under a projector that is suspended from the ceiling. Sensors inside the box enable the top of the box to interact with viewers. The hardware toolkit includes an original I/O module, various sensors such as a sound sensor and an infrared sensor, and cables. The sensors have a mini-pin plug and a resistor as needed for connecting to an I/O module without soldering. The software toolkit is a library of sample programs using Processing that provide various motion patterns of primitive graphics. For example, small circles move in a straight line, a wave, or a circle with constant speed or acceleration. In addition to understanding how to write programs, students expand and combine them to make their own movement of graphic elements. The toolkits enable students to experiment with how movements of objects interrelate with the sensing of human actions and then create an interactive installation.

Taeko Ariga
Koichi Mori
Doshisha Women's College

Dynamics-Based Tools: An Unusual Path to Design Integration

Design, and creativity in general, is as much an intellectual or deliberate act as an intuitive and imaginative process. While most designers naturally recognize this characterization, the digital tools used for design reflect the difference between these two modes of creativity rather than mitigate it. The tools are a collection of narrow and fragmented capabilities, rather than a unified platform for creativity. Consequently, designers are presented with a wide range of tools that often serve a very limited set of problems and stop short of carrying creative ideas throughout the life of a project.

In an architectural context, the challenge designers and educators face is how to integrate conceptual design tools with architectural building information (production) software. Interesting early designs are not always feasible architectural structures, while straightforward and buildable structures often fail to capture clients' imaginations.

This paper looks specifically at the applicability of special effects software in architectural design. Dynamics-based tools such as inverse kinematics, soft/rigid dynamics, cloth simulations, and particles can and should be used to develop an architectural form. The dynamics-based tools not only introduce generative quality into design by facilitating explorative and accidental form-making, but they also can validate design decisions through the use of simulations and the introduction of physically based parameters, such as shear or tension forces, into design. From an academic perspective, dynamics-based tools enhance the conceptual or visceral understanding of architecture through interactive shaping of a form. Furthermore, these interactive simulations translate into a visually inspired, virtual hands-on experience for students and interns by helping them to develop an intuitive knowledge of architecture.

Andrzej Zarzycki
New Jersey Institute of Technology

Educators Program: Education Papers

Friday, 18 December

Exploring Design Solutions Through Online Games

How do famous designers like Kenya Hara and Paul Smith get their inspiration?

Paul Smith found inspiration in his collection of objects, and his extensive travels provide a wealth of visual stimuli. Kenya Hara got his from nature. Inspiration can come in any form, from our daily life, the clothes we wear, ancient architecture, or dreams. This paper explores the possibility of using online games as an inspiration to create good design solutions.

Online games were selected as the topic for a course at Nanyang Technological University and Massey University because it is close to the hearts of Generation Y undergraduates (in this case, third-year BFA students majoring in visual communication). The course was conducted once a week for 14 weeks. Students were told to use online games as the main stimulation for their design solutions, and they were required to show evidence of the connection between their designs and online games. The results are measured by the students' design process and the quality of the final design.

The important point of this research is not to prove that using online games as inspiration tools is right or wrong. The goal is to help students understand that original design solutions come from our surroundings, not from reference books. In the process, students are encouraged to understand their design process better and recognize that anything can be an inspirational tool. The course should help students find their own special way of creating great design solutions.

Jesvin Puayhwa Yeo
Nanyang Technological University

Expressing Contemporary "Japanese-ness" Through Digital Images

This paper describes an educational environment for university-level visual communication designers that allows them to create digital images related to place-branding and local identity. Today, the visual-culture industry directly influences the reputation of its country of origin. Korean and British strategies provide typical models of how to promote national brands through entertainment exports [Anholt 2008]. Since 2000, the Japanese government also has attempted to promote a new national brand identity through projects such as "Japanesque Modern (J-mark)", which encourages harmonizing traditional aesthetics and features of traditional culture with contemporary sense, materials, or technologies.

For several years, I have been thinking about how Japanese designers and artists can apply our traditional culture in contemporary digital art. The aim of this study is to establish a unique expression that we can relate to in modern life by doing something more than just imitating old mannerisms. It introduces basic visual information design to young students by connecting a wide range of historical images, such as ancient pictograms, picture scrolls, and prints, to contemporary media design. As studio work, sophomore-level students are asked to conceptualize and design brands for their hometowns or favorite places using colors, local characters, and cultural events. Then they are asked to design cross-media promotion tools for their brands.

The results show that students learn a lot from traditional local culture, aesthetics, and manners, and that they can produce original works by applying them in a new context using digital design.

Tomoko Hatanaka
Takushoku University

Educators Program: Education Papers

Friday, 18 December

Integration of Computer Graphics and Interactive Techniques in Various Areas of Education

4:15 PM–5:45 PM | Room 416/417

SESSION CHAIR
Judy Brown

Animation Therapy: Using New Media to Create Integrated Art Therapy

This project adopts the successive-approximation method of art therapy to develop a therapeutic method for reducing the broad spectrum of problems among children and adolescents caused by excessive use of video games and mass media.

South Korea has the world's highest internet usage, so its media environments and digital networks have a greater impact on everday life than any other country's. This is a public concern, especially because teenagers have become excessively immersed in the internet. This research uses a wide variety of experiential art therapy in the form of, for example painting, music, drama, theater, and other performing arts to address teenagers' obsession with digital media. The animation therapy combines art therapy with new media in order to reduce teenagers' problems and help them control the stress and anxiety generated by compulsive use of digital media. The project is also exploring working prototypes of Kino-ani drama therapy and animation therapy, and it is conducting experimental art-therapy. Ultimately, the integrated art therapy tools will extend the use of existing art therapy to digital media and pave the way for a more positive usage of new media.

Se-Hyung Park
Jinny Hyejin Choo
Korea National University of Arts

Three-Dimensional Digital Environments and Computer Graphics Influencing K-12 Digital Literacy and Interdisciplinary Lifelong Learning

This paper presents educational activities for improving K-12 students' and educators' digital literacy with a focus on ongoing developments and results. The activities have been supported by with 3D digital technology related to web-based virtual reality and computer graphics principles. Development of this work has generated qualitative achievements such as digital inclusion, learning sustainability, and enhanced school-community participation in third-party educational projects in an at-risk region of São Paulo. The results emphasize that there is enormous potential for stimulating individuals' motivation and development in socially and economicly disadvantaged areas. This approach can increase ordinary citizens' access to advanced technologies and support lifelong knowledge-based learning and teaching.

Jorge Ferreira Franco
Roseli de Deus Lopes
Universidade de São Paulo

An Attempt at Content Expression With Art and Advanced Technology: Analysis and Understanding of Paintings by Ito Jakuchu

This paper describes an attempt to produce content for a next-generation image system. Paintings by Ito Jakuchu were used as prototypes to produce an immersive virtual environment that allows viewers to enter the paintings, which creates possibilities for new applications of artworks and ways to study them. The ultimate goal is collaborative studies among various fields such as art, psychology, and cognitive science, and a larger-than-life display to analyze and understand cultural properties and artworks.

Sangtae Kim
University of Tsukuba

Educators Program: Education Workshops

Thurday, 17 December

Mime and Physical Theater Workshop for CG Animators and Directors

2:15 PM–6:00 PM | Room 416/417

Mime uses simple, logical rules to create illusions of objects, space, and weight, which are all important in 3D animation. This workshop, which has been presented for major game developers and schools since 1998, is designed to help animators and other 3D specialists improve their character-creation skills. It also introduces some drama exercises, such as “Status”, which is one of the most effective exercises for understanding how to create drama by focusing on a character’s time and space.

INSTRUCTOR(S)

Shigeru Araki
Actvirt Co. LLC

CGクリエイターのための パントマイムワークショップ

2:15 PM–6:00 PM | Room 416/417

本ワークショップは、参加者が実際に身体を動かすことでアニメーション制作に必要とされる人の自然な動きや感情表現、演出方法などについて学んで行くものです。その成果はCG映像の制作現場でも認められており、主要なゲーム制作会社、映像プロダクション、クリエイター育成の専門学校や大学等でも取り入れられてきました。参加者は、まず自分の身体を自分のイメージ通りにコントロールすることを目的とした、ストレッチやエクササイズを行います。特定の関節のみを動かしたり、身体に対して集中することで、“動き”に対する観察力を高めます。さらにパントマイムの基礎を手順に則って習得します。実際には存在しないオブジェクトや力、重さなど（イリュージョン）を表現する際のメカニズムを理解し、実演してみます。また、“ステイタス”という演出法について触れてみます。参加者は与えられた場面設定の中で、それぞれのステイタスになりきって振る舞い、他のキャラクターと会話（インタラクション）することで、ドラマチックな場面を作って行きます。

INSTRUCTOR(S)

アクトバート合同会社
荒木シゲル

Educators Program: Education Workshops

Friday, 18 December

SEGA Corporation's Training Programs

9:00 AM–12:00 PM | Room 414/415

An introduction to SEGA Corporation's training programs for new employees, designed to help them acquire basic knowledge of game-development technologies. Training is required because technologies are evolving so rapidly. The workshop summarizes training in several areas, such as real-time shaders for artists, how to initiate effective animation, and continous skill development.

INSTRUCTOR(S)

Iljun Kang
Kazuhiro Fumoto
Tomoyuki Tsukishima
SEGA Corporation

ゲーム業界で生き抜くための陰の立て役者 —セガの社内トレーニング—

9:00 AM–12:00 PM | Room 414/415

セガの社員向け教育および勉強会に関して紹介します。社内教育は、大きく新人教育と勉強会に分けられ、前者は文字通り新入社員に対する短期技術教育を指し、勉強会はゲーム開発に必要なベースとなる知識、または旬の技術をテーマに技術力アップを目的にした定期/不定期に行なわれるものです。技術の進歩が著しい昨今の情勢を鑑み、社内トレーニングは必須であると認識しています。常にアップデートされる教育の中から、効果が感じられ役立ったものについて、「新人研修」「リアルタイムシェーダをやってみる」「効果的なアニメーションの教え方、スキルの上げ方」の3種類を紹介します。新人研修については、1ヶ月間行なわれる研修の項目とその内容の説明、デザイナー(アーティスト)向けの制作チップスをまとめたドキュメント等を紹介します。通常業務の合間に、好きな時に見て学習できる、社内Web教材は重宝されるトレーニングの一つともなっています。シェーダ関連研修は、デザイナー(アーティスト)がシェーダを理解し、表現を追求するためにはどのように作業したらいいのかを考え、その答えの一つとして、デザイナ(アーティスト)がいつも使用しているXSIのような3Dツール上で再現できるものとしました。クオリティの追求をするための、データをアウトプットしてから何度もテクスチャの調整をするといったカットアンドトライ作業も軽減させることができる事例を紹介します。次に、効果的にアニメーションに関連する業務を理解し、スキルを上げるためのトレーシングとして、いくつかの方法を試した中で効果が確認できたもの紹介します。デッサン力を高めるために行なう模写をヒントにアニメーション習得する方法や、クローンモニタを用いたペアデザインなど、様々な事例に基づいて説明をします。このワークショップが、教育現場の皆さんとの情報交換の場となることも目的の1つとして考えています。

INSTRUCTOR(S)

株式会社セガ
康日準
麓一博
築島智之

Workshop: Digital Character Making

2:15 PM–6:00 PM | Room 414/415

This workshop introduces a new concept of "character making", based on literal information and digital technology, and asks participants to practice how to use the new method to create usable characters. The definition of character making is to not only design a character, but also to plan how to exploit the character, how to tranform your idea to literal information, how to develop a story, how to collect visual information and assemble a digital scrap book, and how to edit and morph your image. Each of these steps requires creative thinking and option testing. The workshop begins with a general introduction to the character-making concept, then proceeds step by step through the development process. Attendees should bring their own laptop computers.

INSTRUCTOR(S)

Mitsuru Kaneko
Tokyo University of Technology

ディジタルキャラクターメイキングワークショップ

2:15 PM–6:00 PM | Room 414/415

本ワークショップでは、ストーリーやキャラクターの行動、性格設定などのリテラル資料に基づくディジタルキャラクターメイキング手法の解説とその演習を行います。キャラクターメイキングとは、それ自身で性格を持ち、ストーリーを伝えることができるオブジェクトやキャラクターを考案、デザインし、それらを効率的に運用する手法であり、ストーリー、プロット、エピソード、キャラクター設定、キャラクターの描写、そして流通の利便性を考慮したデータ管理までを含んでいます。またキャラクターデザインとは、プロデューサがデザイナーにキャラクターイメージを伝え、キャラクターデザイナーがそのイメージをもとに画像やモデルをデザインし、デザイン原案をまとめていく創作活動をいいます。本ワークショップは、このようなキャラクター創作活動について理解を深めることを目的とします。演習は、キャラクターメイキングプロセスに従って行います。まず第1段階ではリテラル資料であるS、Mプロットの作成とキャラクターのさまざまな特徴を示す設定情報をまとめます。第2段階ではビジュアル資料を作成するためのキャラクター印象スケールによるキャラクター画像の分類を行います。第3段階では渡辺賢吾氏が作成したコラージュシステムを用いてデザイン原案を作成します。本ワークショップの演習を体験いただくためにノートPCを持参してください。もちろん、ノートPCをお持ちでない方も、聴講いただくことができます。

INSTRUCTOR(S)

東京工科大学クリエイティブラボ
金子満

Educators Program: Education Workshops

Saturday, 19 December

Teaching Teachers: Giving Educators Insight Into Production

9:00 AM–10:45 AM | Room 414/415

In this talk, Tad Leckman, Lucasfilm Animation Singapore's Director of Training, discusses how the studio has used unconventional methods to engage with instructors and student, and give them insight into the production process. While most studios engage in outreach to schools, these efforts most often take the form of recruiting trips and presentations aimed at students. Some studios also work with higher education faculty, offering studio visits or a chance to spend a day or two in the studio's training department. Lucasfilm has gone even farther to bring the experience of working in a studio to faculty and their students.

To date, Lucasfilm has concentrated its educational outreach efforts in three areas:

1. Continuing Artist Education
The Jedi Masters Program, launched in 2007, focuses on continuing the education of promising artists through six-month, production-based training at Lucasfilm's Singapore studio. The talk summarizes the impact of the program on not only Lucasfilm Animation Singapore, but also on schools and other studios in Singapore. And it reviews the challenges the studio faced in bringing a large number of apprentices into the studio for an extended period of time.

2. Direct Faculty Education
Lucasfilm believes that the single most important factor in the success of any digital media program at any level is the quality of faculty. Helping an experienced artist learn to teach effectively is often much easier than giving an experienced instructor production experience. Lucasfilm gives its artists opportunities to teach and introduces educators to the tools, theories, techniques essential to production.

3. Inspiring the Next Generation of Artists and Educators
Lucasfilm inspires Singaporean youth to pursue careers in digital media and educates the general public about career opportunities related to production. In areas of the world with longer traditions of animation, visual effects, and game production, such efforts are not really necessary, but in Singapore, they are extremely important to the continued growth of the industry.

INSTRUCTOR(S)
Tad Leckman
Lucasfilm Animation Singapore

ティーチングティチャーズ: プロダクションの制作プロセスに対する理解を教育者に与えること

9:00 AM–10:45 AM | Room 414/415

このセッションでは、ルーカスフィルム・アニメーション・シンガポールの研修長タッド・レックマンが、教育者や学生との関係を深めるために、どのような型破りな方法を使ったか、そしてプロダクションの制作プロセスに関する理解をどのように持てばよいかを紹介します。

多くのスタジオが行う学校への働きかけは、ほとんどの場合、社員募集のための学生を対象にした学校訪問やプレゼンです。また、いくつかのスタジオでは、大学の教育者に働きかけ、スタジオ見学やスタジオのトレーニング部門の1～2日間の体験機会を提供します。ルーカスフィルム社は、これらに加えて、教育者やその学生にスタジオで作業する機会を提供しています。

これまで、ルーカスフィルム社では、3つの領域について教育活動をしています:

1. アーティストへのリカレント教育
ジェダイ・マスターズ・プログラムは、2007年に発足し、ルーカスフィルム社のシンガポールスタジオ内で、6か月間の制作を中心とした研修を、見込みのあるアーティストにリカレント教育として行うものです。このセッションでは、そのプログラムの概要を説明し、研修生の作品の例を示し、このプログラムが、ルーカスフィルム社だけではなく、学校やシンガポールにある他のスタジオにもたらしてきた影響について紹介します。また、大人数の研修者を受け入れることによりスタジオが直面した問題についてもお話します。

2. 教育者向け教育
ルーカスフィルム社は、あらゆるレベルのデジタルメディア教育の成功の最大要素は教育者の質であると考えています。多くの場合、経験豊富なアーティストが効果的に教えることを学ぶことを支援するのは、経験豊富な教育者に制作経験を積んでもらうことよりも易しいと言えます。ルーカスフィルム社は、アーティストにスタジオで教える機会を与え、また教育者には制作に欠かせないツール、理論、技術を紹介します。

3. 次世代のアーティストと教育者を奮い立たせる
ルーカスフィルム社はデジタルメディアのキャリアを追求するシンガポールの若者を奮い立たせ、一般の人たちに制作に関連した就業チャンスに関する情報を提供しています。アニメーション、視覚効果、ゲーム制作に長い伝統のある地域ではそれほど努力する必要はありませんが、シンガポールでは、業界が成長していくためにこのような努力をすることが極めて重要となっています。

INSTRUCTOR(S)
ルーカスフィルム・アニメーション・シンガポール
タッド・レックマン

Educators Program: Education Workshops

Saturday, 19 December

A Practical Workshop for Next-Gen Game Creators Utilizing the Advanced Graphic Engine MAJUA

2:15 PM - 6:00 PM | Room 414/415

Premium Agency Inc (PA) is a veteran Japanese console video game and digital content developer who, in the past few years, has been very active in game development education across Asia. From offering intensive Playstation 3 courses for the Hong Kong government, to establishing a game development department at Ta Tung University, Taiwan, to helping establish Nanyang Polytechnic's Games Resource Centre in Singapore, they have garnered universal praise for the applicability and quality of their course content. Premium Agency swears by pulling their own staff off the front lines to teach, as well as ensuring that all students train and practice using actual development kits, meaning the knowledge the students gain will apply directly to any game development position they might be considered for in the future.

PA's course material is simultaneously balanced and specialized; by offering a three phase program for their courses, all students are taught the basics in the first stage, which includes history of the game industry, as well as the fundamentals of game design, 3D modeling and animation, and programming. In the later phases, students are allowed to branch out, taking specialized courses in what they are most interested in, and finally forming a small, instructor-supervised development team with fellow students, in which they can apply the knowledge they've learned and get a taste of actual development with an expert at their side.

In this workshop, attendees will learn how to make use of Premium Agency's next-gen web development platform MAJUA, which is powered by both PA's internal development engine and open-source Blender3D technology. In a compact format based on that of PA's full course, instructors will first explain how to use MAJUA, and continue to offer support and guidance as students make use of the technology and pre-prepared game assets to create a small scale action game.

It is a workshop requirement that participants bring a laptop that has at least the following specifications:

OS: WindowsXP/WindowsVista

RAM: 1GB or more

CPU: Intel(R) Core 2 Duo 2GHz or more

Graphic Cards: NVIDIA(R) GeForce 7XXX Series

(8800/8900/9300 recommended)

Wireless LAN support

At the end of the workshop, attendees present their work and discuss the ideal method for future game-creator training.

INSTRUCTOR(S)

Motonobu Kawashima
Katsunori Yamaji
Premium Agency Inc.

グラフィックエンジン "MAJUA"を活用した実践的次世代ゲームクリエイター育成

2:15 PM–6:00 PM | Room 414/415

プレミアムエージェンシーは、日本において培われてきたコンソールゲームコンテンツの制作技術を、実践的なトレーニングを通じてアジア地域に伝授するプロジェクトを積極的に進めて参りました。

次世代を担うゲームクリエイターを育成するためには、ゲームデザイン、グラフィックデザイン、プログラミングの各要素技術を、実践を通じてバランスよく学ぶことのできるカリキュラムの構築が必須です。

本ワークショップでは、プレミアムエージェンシーがアジア地域において実施している、次世代ゲームクリエイター育成プログラムによるコンテンツ制作の体験実習を行います。

受講者は、あらかじめ用意されたグラフィック素材や、Blender3D、そしてWebブラウザで動作する弊社独自開発のグラフィックエンジン"MAJUA"を活用し、ゲームコンテンツの制作を体験します。

このワークショップを通じて受講者の皆様には、これまでプレミアムエージェンシーが実践してきたゲームコンテンツ制作の一連の概要について体験していただきたいと思っております。

本ワークショップの受講者は、次のスペックを満たすラップトップを持参してください。

・OS: Windows XP /Windows Vista
・メモリ容量: 1GB以上
・CPU: Intel(R) Core 2 Duo 2GHz プロセッサー以上
・グラフィックボード: NVIDIA(R) GeForce 7XXX Series 以上
・無線LAN対応機種

また、体験実習の後は、受講者の作品発表を行うとともに、今後のゲームクリエイター育成の在り方について、講師と受講者の皆さんとでディスカッションを行います。多くの皆様のご参加をお待ちしております。

INSTRUCTOR(S)

株式会社プレミアムエージェンシー
川島 基展
山路和紀

Educators Program: Education Talks

Saturday, 19 December

Talks on education for all ages, including children, junior high school students, and senior citizens.

11:00 AM–12:30 PM | Room 414/415

SESSION CHAIR
Judy Brown

CG Education Improves the Power of Human Expression

For more than 10 years, ZOU STUDIO's CG workshop has used computers to improve the power of human expression for people of all ages and abilities. This talk summarizes the format of the workshop, the applications it teaches, which computer systems are most appropriate in the workshop environment, and how many tutors are required to help students achieve their goals.

The workshop focuses on three basic principles: communication, persistence, and repetition. During the talk, comments from three workshop students illustrate the importance of these principles:

• Misako Hirasawa, 82, has repeated the same CG lesson many times. Now she can use orthographic views to create fantastic 3D characters. She says: "I am very happy to be able to understand and create CG artworks. It is important for me to create the same scene more than once."

• Tomoko Ikegami began creating 3D CG artworks after she retired 10 years ago. Now she understands how to create with digital tools. She says: "I am so glad to create better artworks than I had imagined."

• Suzuka Hirabayashi is mentally disabled, but she has great powers of concentration. She paints beautiful flowers and people with a pen tablet. She says: "A laptop is a great convenience for me, because I can use it to create CG artworks. I am so happy to go to a fantasy world."

INSTRUCTOR(S)
Kyoko Eguchi
ZOU STUDIO, Inc.

Educational Activity Using a Photograph Mapping System

This talk summarizes a photograph mapping system that uses geocoding and GPS to support visualization of the sakura (cherry-blossom) front as it moves across Japan in the spring, fieldwork in suburban areas, and interactive questionnaires in museums. The system has been used in events and workshops for suburban residents, elderly persons, students, and internet users. It is very effective for learning about everyday events and interactive technologies.

INSTRUCTOR(S)
Hidenori Watanave
Photon, Inc.,
Tokyo Metropolitan University

WiiRemote Programming: Interactive Techniques for Education for Young Engineers

This case study presents results from a project that uses WiiRemote, the consumer video game controller, to teach interactive techniques in engineering schools and technical colleges. The project is based on findings from earlier attempts to use WiiRemote to motivate learning among middle-school students.

INSTRUCTOR(S)
Akihiko Shirai
Ecole Nationale Supérieure d'Arts et Métiers, National Science Museum (Miraikan)

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Ayumi Miyai
Computer Graphic Arts Society

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pH studio Inc.

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Werner Hansmann
Universität Hamburg

Junichi Hoshino
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Joan Huntley
Stonehill International School

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Hyun Ju Kim
University of Massachusetts Lowell

Midori Kitagawa
University of Texas at Dallas

Sachiko Kondo
pH studio Inc.

Wobbe Koning
Montclair State University

Caroline Larboulette
Universidad Rey Juan Carlos

Tony Longson
California State University, Los Angeles

Michael McGrath
Colorado School Of Mines

Koji Mikami
Tokyo University of Technology

Ayumi Miyai
Computer Graphic Arts Society

Kazunori Miyata
Japan Advanced Institute of Science and Technology

Russell Pensyl
Northeastern University, Nanyang Technological University

Jacob Pollak
Ferris State University

Saty Raghavachary
DreamWorks Animation

Marla Schweppe
Rochester Institute of Technology

Scott Short
University of Wisconsin-Stout

Kayt Sunwood
University of Alaska Fairbanks

Ferris Webby
Rochester Institute of Technology

Emerging Technologies: Adaptation

EXHIBITION HALL A/B

Thursday, 17 December	9:30–18:30
Friday, 18 December	9:30–18:30
Saturday, 19 December	9:30–17:00

Airflow Interaction With Floating Images

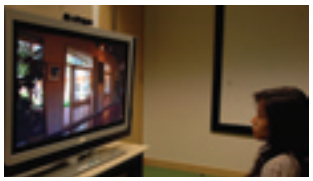
An Operating Method for a Bipedal Walking Robot for Entertainment

Another Shadow

BiDi Screen: A Thin, Depth-Sensing LCD for 3D Interaction Using Light Fields

Daichi's artworking: Enjoyable painting and handcrafting with new ToolDevices

DIY Hardware: Reinventing Hardware for the Digital Do-It-Yourself Revolution



Eye HDR: Gaze-Adaptive System for Displaying High-Dynamic-Range Images

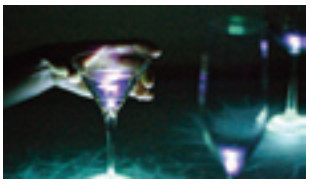
FlexTorque: Innovative Haptic Interface for Realistic Physical Interaction in Virtual Reality

Fur Display

High-Dynamic-Range Video Solution

Himawari Plant Robot: Creature Expression Using Shape-Memory-Alloy Actuator Cluster

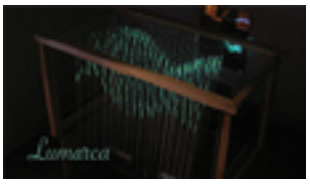
Instant Broadcasting System: Mobile Collaborative Live Video Mixing



Interaction Bar

Kaidan: Japanese Horror Experience in Interactive Mixed Reality

Light Field Copy Machine



Lumarca

Emerging Technologies: Adaptation

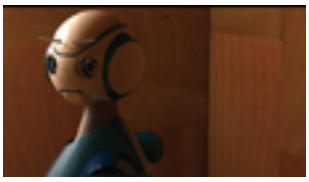
EXHIBITION HALL A/B

Thursday, 17 December	9:30–18:30
Friday, 18 December	9:30–18:30
Saturday, 19 December	9:30–17:00

MemoIcon: Using Everyday Objects as Physical Icons

Petimo: Children's Companion for Safe Social Networking

PUYO-CON



SCHEMA: Multi-Party Interaction-Oriented Humanoid Robot

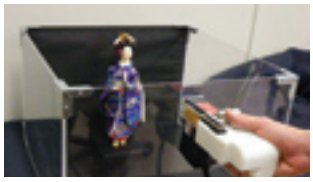
SCOPE

Shimon + ZOOZbeat : An Improvising Robot Musician You Can Jam With

SixthSense: A Wearable Gestural Interface

Tearable : An Experience to Sense Infinite Paper Tearing

The Cubtile: 3D Multitouch Brings Virtual Worlds Into the User's Hands



Touch the Untouchable

Volume Slicing Display

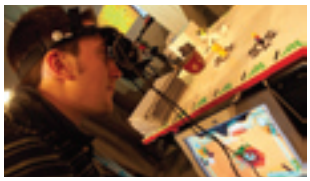
Emerging Technologies Talks

Friday, 18 December
9:00–10:45 AM | Room 413

Hi-Tech Fun and Games

New developments in computer graphics and interactive techniques are making games and leisure ever more involving. These presentations include a vivid Japanese ghost experience in augmented reality, a wall of interactive shadows, and a real-time video-mixing system controlled via mobile phones.

SCOPE



Using tangible traditional toys to enhance augmented reality in games and causual play.

SCOPE merges the basic characteristics of video games and real-life toys to improve existing games or create new ones. By attributing various virtual parameters commonly used in video games (power, life, magic, experience, attack, weapons, etc.) to tangible toys, it brings the toys to life. With this approach, it is possible to create all sorts of videogame concepts mixed with the real world. For example, a child's bedroom could become a natural battleground for play.

Frantz Lasorne
L'École de design Nantes Atlantique

Kaidan: Japanese Horror Experience in Interactive Mixed Reality

This novel demonstration provides the ultimate nightmare experience. Virtual ghosts depicted by first-of-its-kind technology, scary sounds, and visual mixed-reality experiences attack visitors in a dark, spooky Japanese room. Ghosts are luridly dramatized using relighting techniques, and visitors are terrified by various gimmicks in the room.

Wearing a head-mounted-display and earphones, visitors see and hear screaming ghosts in an old Japanese home. When the ghosts attack, visitors fight back with a sword device. In another scenario, visitors can use the sword device to become a heroic samurai warrior in an action movie.

Keisuke Inoue
Taiki Wada
Kazuhiro Kitamura
Shigeaki Nishino
Ryosuke Ichikari
Ryuhei Tenmoku
Toshikazu Ohshima
Hideyuki Tamura
Ritsumeikan University

Emerging Technologies Talks

Friday, 18 December
9:00–10:45 AM | Room 413

Instant Broadcasting System Mobile Collaborative Live Video Mixing

With Instant Broadcasting System, people can collaboratively produce, edit, and broadcast live video using only mobile phones, a laptop computer and available mobile networks. In this demonstration, it is used as a VJ system that supports visitor-generated video, flexible content selection, a communication back channel, and real-time loop editing. These features move the system beyond previous webcam-based VJ concepts.

The first generation of applications in this genre enables broadcast of live video streams from various user contexts over mobile networks such as 3G. Instant Broadcasting System explores a second generation of such applications, in which professional techniques for col-laborative live video editing are made available on mobile platforms. Using networked camera phones, it is possible to mix live concurrent video streams from multiple users for public display on the internet and locally. The design space adapts these new possibilities, previously only available to professional TV-production teams, to amateurs in various contexts. For example, parents might use it to broadcast multiple live images of soccer matches where their children are competing. Or, as demonstrated by the Instant Broadcasting System, night-club patrons and viewers of public exhibitions can share their experiences in real time.

Arvid Engstrom
Liselott Brunnberg
Josefin Carlsson
Oskar Juhlin
Mobile Life at Interactive Institute

Daichi's artworking: Enjoyable painting and handcrafting with new Tool Devices

One day, a boy named Daichi created a sketch of a lovely table and chair, and he wanted to convert them to 3D models. But he realized that he did not know how. His computer skills were limited.

In conventional computer systems, it is not easy to create 3D models and paint on them, because the human interface provides only a mouse, a keyboard, and a 2D display. This new mixed-reality system solves this problem. Even Daichi can use this system's metaphors of familiar real-life tools to create finished 3D art without learning complex software systems. The system imitates shapes of real tools and provides tactile and audio sensations so users can create and paint on real 2D surfaces, real 3D objects, and virtual objects.

Yusuke Takami
Mai Otsuki
Asako Kimura
Fumihisa Shibata
Hideyuki Tamura
Ritsumeikan University

Another Shadow

The shadow of a guest on the wall starts moving on its own as if it is alive.

The goal of this project is to create an innovative interactive experience by blurring the boundary between real and virtual. The technical innovation is silhouette extraction using an infrared camera and a shape-deformation technique that does not include an explicit skeleton. Many silhouette-extraction techniques use background subtraction with a blue screen. Another Shadow combines a motion-capture camera with retro-reflective cloth for this purpose. This makes the vision process much easier and works very reliably without much calibration. Standard shape-deformation methods embed a skeleton in a shape and move the skeleton. Another Shadow does not use a skeleton and directly deforms the shape as if it is a rubber sheet. The system applies several control points to the shape and applies predefined movements to them.

A modified shadow is projected on the wall, where it moves on its own - swinging its hands and nodding its head. Eventually, the silhouette disappears, and another shadow appears. The result is an entertaining experience that provokes reflection on the relationship between the real and virtual worlds.

Takeo Igarashi
The University of Tokyo/JST ERATO

Hisato Ogata
Leading Edge Design

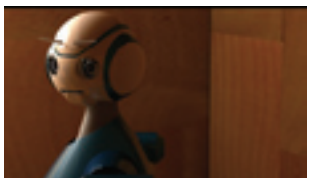
Emerging Technologies Talks

Friday, 18 December
11:00 AM–12:45 PM | Room 413

Meet the Robots!

Interaction with robots is becoming more and more advanced, and taking on new forms and capabilities. This session demonstrates robots interacting, playing music, supporting children, and performing many other tasks.

SCHEMA: Multi-Party Interaction Oriented Humanoid Robot



Most of our daily communication occurs in groups, at school, home, and work place, so this project proposes a robot that can participate in routine human conversations.

Traditional human-robot interaction studies have focused on one-to-one interaction. SCHEMA is a robot that participates in and activates group communication. The system design is based on psychological theories of multi-party communication. When a master of ceremonies in a quiz game selects a question with a mobile device, the question is projected on a screen. Panelists (SIGGRAPH Asia 2009 attendees) answer the question as SCHEMA recognizes the context of the game using speech recognition and image processing of participants faces, visual gaze, and other nonverbal cues. Then the robot selects its behaviors and targets (panelists) at appropriate times and with appropriate utterances to maximize its participation in the game.

Yoichi Matsuyama
Kosuke Hosoya
Hikaru Taniyama
Hiroki Tsuboi
Shinya Fujie
Tetsunori Kobayashi
Waseda University

Petimo: Safe Social Networking Robot for Children

A novel interactive approach that helps children make friends in safe social networks and reassures parents that their children are protected.

With the exponential expansion of digital media, more children are using social networks to communicate with their friends, and their numbers will grow rapidly in the future. But cyberspace is an increasingly unsafe environment that often victimizes children. Petimo is an interactive robotic toy that protects children from the dangers of online social networks and provides fun, face-to-face interaction with friends. It requires physical proximity before children can add friends to their social cyberworlds. In addition, children experience enhanced relationships with their friends through interactions in the real and virtual worlds by sending gifts and emoticons mediated by Petimo with haptic, visual, and audible events.

Petimo is designed specially for children between seven and nine years of age. Its many cutely designed interfaces, emoticons, and gifts have been specially designed to enhance its appeal to children. When the robot is squeezed or a gift is received, it displays a joyfully beaming face with a trilled sound. Children can use Petimo as a social networking tool, a learning companion, and/or a pet.

This demonstration also features Petimo World, which provides interactions such as 3D visualization of spatial arrangements, so children can understand how close their friendships are, interact with personalized avatars, and send special gifts and emoticons.

Adrian David Cheok
National University of Singapore and Keio University

Owen Noel Newton Fernando
National University of Singapore

Charith Lasantha Fernando
Keio University

Kening Zhu
National University of Singapore

Anusha Indrajith Withana
Keio University

Nimesha Ranasinghe
National University of Singapore

Yukihiro Morisawa
Keio University

Kasun Karunanayaka
National University of Singapore

Makoto Danjo
Keio University

Isuru Sawubhagya Godage
Michelle Narangoda
National University of Singapore

Nancy Lan-Lan Ma
Miyuru Dayarathna
Keio University

Roshan Lalintha Peiris
James Keng Soon Teh
Dilrukshi Abeyrathne
Chamari Priyange Edirisinghe
Kris Hoogendoorn
Junsong Hou
Wei Wang Thang
National University of Singapore

Himawari Plant Robot: Creature Expression Using Shape-Memory-Alloy Actuator Cluster

The goal of this project is to use shape-memory-alloy actuators to realize a wriggling creature. Normally, a shape-memory-alloy actuator generates a well-defined action (robot appendages grip something or walk). But in this project, precisely controlled actuators express wriggling and creature expression. It demonstrates that an assembly of actuators can be applied to shape display of 3D objects by increasing the number of actuators and the resolution.

Akira Nakayasu
Kiyoshi Tomimatsu
Kyushu University

Emerging Technologies Talks

Friday, 18 December
11:00 AM–12:45 PM | Room 413

Shimon + ZOOZbeat : An Improvising Robot Musician You Can Jam With

Gil Weinberg
Guy Hoffman
Ryan Nikolaidis
Roberto Aim
Georgia Institute of Technology

ZOOZbeat is a gestural mobile musical controller that allows novices and musicians to improvise with Shimon, an autonomous robotic marimba player designed to create inspiring human-robot musical interactions that lead to novel musical experiences and outcomes. Shimon combines computational modeling of music perception, interaction, and improvisation with the capacity to produce melodic and harmonic acoustic responses through choreographic gestures. The robot, therefore, "listens like a human and improvises like a machine".

Real-time collaboration between human and machine musicians capitalizes on the combination of their unique strengths to produce new and compelling art. This project aims to combine human creativity, emotion, and aesthetic judgment with the algorithmic computational capabilities of computers, allowing human and artificial players to build on each other's ideas. A robotic musician brings computer music into the physical world acoustically, gesturally, and visually. Through the visual connection between sound and motion, an anticipatory embodied action approach, and a gesture-based actuation system, the robot can jam with humans in real-time synchrony without delay.

With ZOOZbeat, even non-musicians can interact with Shimon to enjoy expressive and creative access to music making and improvisation. Through a set of easily learned, intuitive gestures, ZOOZbeat players can generate musical material that is processed to fit the current musical context and entered into a looping sequencer. Users can then perform additional gestures to manipulate and share their creation. A "musical wizard" analyzes the user's gestures and maps them to creation of meaningful melodic, rhythmic, and harmonic lines.

At SIGGRAPH Asia 2009, musicians and non-musicians can use this system to collaborate with a remote autonomous, improvisational robot.

An Operating Method for a Bipedal Walking Robot for Entertainment

Yuta Sugiura
Charith Lasantha Fernando
Anusha Indrajith Withana
Gota Kakehi
Keio University, JST ERATO

Daisuke Sakamoto
The University of Tokyo, JST ERATO

Maki Sugimoto
Masahiko Inami
Keio University, JST ERATO

Takeo Igarashi
The University of Tokyo, JST ERATO

Masa Inakage
Keio University

Tele-existence applications for robotic systems are becoming popular and widespread. They enable users to control a remote machine while experiencing a sense of being in the remote location. Initially, tele-existence was used for remote de-mining and mission-critical tasks in space, to avoid risking human life. Recently it has been applied in many entertainment and gaming applications, to enable a community to play together in one virtual environment and share the experience. But existing tele-existence systems require a large-scale interface, a lot of processing power, and a large space for proper operation.

With this new bipedal walking robot, users can experience tele-existence in a small space, with a minimum numer of modules attached to the body and a simple, easy-to-understand controlling interface. The system configuration mainly focuses on detecting specific human actions such as foot, arm, and finger movement, and recreates synchronous motions in the bipedal robot. For example, in one scenario, each user stands in front of a visual display and remotely controls players in a small-scale soccer pitch. Physical movement of the robots is reflected in the virtual environment, and users can experience the sensations of the live game and a large audience via a head-mounted display.

This project realizes a tele-existence system not only for entertainment robotics, but also for synchronous motion in many other applications. Bipedal walking robots provide a common ground for remote users to carry out collaborative physical tasks while creating a multiple tele-existence working environment.

Emerging Technologies Talks

Friday, 18 December
14:15–16:00 | Room 413

DIY Hardware: Reinventing Hardware for the Digital Do-It-Yourself Revolution

As the digital do-it-yourself revolution gains momentum, electronic hardware is becoming accessible, and some adventurers are conscientiously turning it into simply another material for people to play, invent, and express themselves with. In this session, the people who are actively trying to bring about this change discuss the motivations behind their efforts, the initial results of their work, and the challenges that lie ahead.

Nicolas Villar
Microsoft Research

Takaaki Ishizawa

Shigeru Kobayashi

Jamie Allen

Kazuhiro Jo

Ryota Kuwakubo

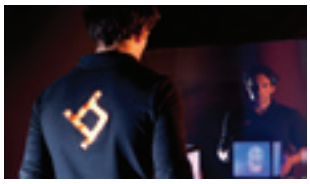
Emerging Technologies Talks

Saturday, 19 December
9:00–10:45 AM | Room 413

Twist Me, Turn Me, Throw Me: The Future of Interaction

Interfaces have moved beyond the desktop and into the real-world environment. In the future, digital information might be floating in front of you or embedded in everyday objects, or there may be new forms of engagement where you twist, turn, or even throw the interface!

The Cubtile: 3D Multitouch Brings Virtual Worlds Into the User's Hands



This demonstration combines the cubtile, a new 3D multitouch device that expands tactile input from surface-only interaction to full-volume manipulation, with an augmented-reality-like setup that blends interaction and visualization spaces to put 3D objects between the user's hands.

While multitouch technology offers many advantages, it is mostly restricted to 2D interaction. On the other hand, interaction with 3D environments is still an active research area looking for more effective input devices and techniques. The cubtile consists of five multitouch surfaces assembled into a fixed-position cube (the cube sits on the sixth side). Its cubic shape materializes the axis of the 3D world, which appears enclosed within the device and allows users to map classical multitouch gestures in the 3D space.

The project's main innovation is in the augmented-reality-like setup into which the cubtile is integrated. Unlike typical uses, where the cubtile stands in front of a display, it is now integrated into a solution that displays the object through a mirror, which reflects the back of the cubtile and the 3D object directly into it, so the manipulated 3D object appears through this hidden side of the cubtile, right between the reflection of the user's hands.

Because the cubtile can map classical multitouch gestures and combinations of them to 3D transformations, users see their reflected hands around the 3D object and the virtual model following their finger motions. They can also perform a special gesture (fast upward translation on both lateral sides) that moves the 3D object out of the cubtile, just above the reflection, and provides more room to manipulate the model.

This experience fulfills the requirements of the primary targeted users in museums and the cultural heritage domain, who want to offer their visitors interactive, "hands-on" visualizations of their protected objects. The demonstration's main 3D object is an ancient Egyptian statuette, complemented with other cultural heritage objects and architecture samples. It combines interaction and visualization techniques for a better understanding of 3D worlds.

Jean-Baptiste de la Rivière
Emmanuel Orvain
Cédric Kervégant
Nicolas Dittlo
Immersion SAS

PUYO-CON

This new controller technology goes far beyond traditional button-type devices. It enables input based on direct touch, force, and shape transformation. Because the soft material is "crash-worthy", the controller can even be thrown.

Human beings use many different types of sensory information to perform a broad range of activities. But most conventional game controllers limit sensory input to a small, fixed portion of the sensorial spectrum. Players can press or release buttons or move the controller in space, but the controller must always be held in the user's hand. With PUYO-CON, sensory input is far more flexible because players can control activities by applying force to soft material, grasping the controller, and transorming its shape.

The goal of this project is to enhance entertainment experiences for millions of game players around the world.

Ryousuke Hiramatsu
University of Tsukuba

Emerging Technologies Talks

Saturday, 19 December
9:00–10:45 AM | Room 413

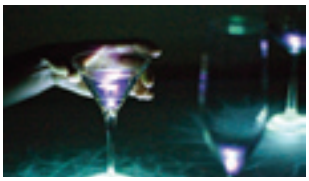
SixthSense: A Wearable Gestural Interface

This prototype is comprised of a pocket projector, a mirror, and a camera. The hardware components are contained in a pendant-like wearable device. Both the projector and the camera are connected to the mobile computing device in the user's pocket. The projector projects visual information on walls and other physical objects, which become interfaces, while the camera recognizes and tracks the user's hand gestures and physical objects using computer-vision techniques.

SixthSense implements several applications that demonstrate the usefulness, viability, and flexibility of the system. The map application allows users to navigate a map (zoom in, zoom out or pan) displayed on a nearby surface with intuitive hand gestures. The drawing application lets the user draw on any surface by tracking the fingertip movements of the user's index finger. SixthSense also recognizes user's freehand gestures (postures). For example, the system implements a gestural camera that takes photos of the scene the user is looking at by detecting the "framing" gesture. For example, users can display and flick through photos on any surface or wall, draw icons or symbols in the air with their index fingers, select a magnifying-glass symbol to go to the map application, or draw an @ symbol to check their mail. The SixthSense system also augments physical objects by projecting more information about them as users interact with them. For example, a newspaper can show live video news or dynamic information can be provided on a regular piece of paper.

Pranav Mistry
Pattie Maes
MIT Media Lab

Interaction Bar

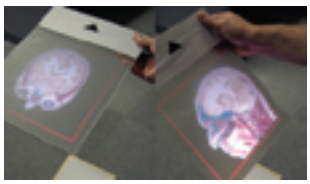


In Interaction Bar, each wine cup represents a different character and emotion. Simulated scenes and the interaction surface react to users with unique visuals in each situation. Just like a real barroom crowd, these interactions can build bridges of friendship and encourage conversations, even among people who have never met.

This system may provide a conceptual model for future furniture that is more than just physical components in a room. Furniture can become a participant in a lifestyle.

Chia-Hao Yang
Bo-Fan Jheng
National Taiwan University of Science and Technology

Volume Slicing Display



The Volume Slicing Display enables interactive exploration of volumetric data (for example, medical images) using a piece of plexiglass (or paper) that functions both as a control interface and a passive, untethered projection screen.

This experimental interface may one day enable teams of experts (surgeons, geologists, designers, architects) to explore 3D virtual objects as if they co-exist in the physical space, and explore them interactively using simple pieces of paper. With the Volume Slicing Display, radiologists would be able to retrieve a certain amount of three-dimensionality from a flat X-ray plate at any time, by just touching certain portions of the passive, untethered screen and freely manipulating it above a calibrated projector. The interface could also solve another important issue: medical-record confidentiality. Without the machine, the piece of paper will only show an undecipherable barcode.

This project highlights several interesting possibilities, including development of an "origami-like" user interface, in which the shapes and folds of the flexible screen are interpreted by the machine as specific display commands. In the near future, the system will include finger tracking over the surface, which could enable annotation and trajectory tracing (surgical paths, for example) in space.

Alvaro Cassinelli
Masatoshi Ishikawa
The University of Tokyo

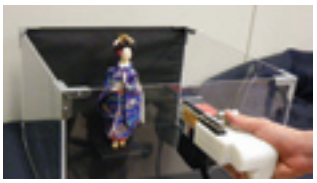
Emerging Technologies Talks

Saturday, 19 December
11:00 AM–12:45 PM | Room 413

In Touch With the World

Computer graphics are already moving from 2D to 3D. The next step is touch! These sessions present examples of how we can touch and feel actual or imagined objects, recreate novel sensations, or use the physical world to organize digital information.

Touch the Untouchable



This prototype system employs a laser range finder to determine the distance to a given object. Users can feel the shape of the object in real time even though it exists inside a glass case.

In the real world, we routinely touch and perceive the properties of real objects in reachable areas, but many valuable, educational objects exist only in unreachable situations, such as museum showcases. This project provides a method for feeling untouchable objects through a haptic interface.

In the SIGGRAPH Asia 2009 demonstration of the method, users press the interface onto a glass case that contains a Japanese doll. As they move the interface on the surface of the glass, users feel the reaction force from the doll. The reaction force is determined by the distance to the surface of the doll. When the magnification factor is changed, the object becomes larger or smaller, so users can feel details such as texture and detailed shapes.

This system can be applied for education to understand many characteristics of valuable exhibits and for quality inspection of engineering products.

Hiroaki Yano
Yuichi Miyamoto
Hiroo Iwata
University of Tsukuba

Tearable : An Experience to Sense Infinite Paper Tearing

The tearing action is common in everyday life. One purpose of this action is to suppress data, as in a paper shredder, Tearing can also be an enjoyable method of stress reduction. In every case, tearing is not repeatable in real life. It is irreversible. But in this haptic system, users can experience tearing again and again.

The interface provides resistance forces and vibrations based on analyzed vibration data of tearing real paper. Accurate force feedback is conveyed with a DC motor and a hook-and-loop fastener. The force feedback can be adjusted to deliver tearing sensations for different types of paper.

Tearable could be a relaxation tool, because it allows users to repeatedly tear pieces of their favorite paper. It might also be appropriate in toys for babies and young children.

Takuya Maekawa
Yuichi Itoh
Keisuke Takamoto
Kiyotaka Tamada
Takashi Maeda
Yoshifumi Kitamura
Fumio Kishino
Osaka University

Emerging Technologies Talks

Saturday, 19 December
11:00 AM–12:45 PM | Room 413

Fur Display

Fur Display makes invisible information visible. It not only delivers dynamic movements of appealing, bushy fur, but it is also a feathery, visual, tactile display that invites touch and interaction. Earlier versions of this concept often used rigid surfaces like tabletops, but Fur Display presents touchable fur with surprising dynamic movement. The device is simple and small, so it can be placed on clothing, appliances, or personal belongings, where it becomes a useful, friendly interface in our daily lives.

Masahiro Furukawa
The University of Electro-Communications

Yuji Uema
Yuta Sugiura
Atsushi Okoshi
Keio University Graduate School of Media Design

Naohisa Nagaya
The University of Electro-Communications

Takuji Tokiwa
Tokyo University

Maki Sugimoto
Masahiko Inami
Keio University Graduate School of Media Design

FlexTorque: Innovative Haptic Interface for Realistic Physical Interaction in Virtual Reality

Kinesthetic stimulations, produced by forces exerted on the body, are sensed by mechano-receptors in the joints, tendons, and muscles. When a human hand holds a heavy object, its weight produces torques in the wrist, elbow, and shoulder joint. Each muscle generates a torque at a joint that is the product of its contractile force and its moment arm at that joint. The idea behind FlexTorque is to reproduce human muscle structures that allow us to perform dexterous manipulations and interactions. The result is a wearable haptic interface that presents realistic kinesthetic stimulus to the human arm.

FlexTorque suggests new possibilities for highly realistic, very natural physical interaction in virtual environments. There are no restrictions on the arm movement, and it is not necessary to hold a physical object during interaction with objects in virtual reality. Because the system can generate strong forces, even though it is light-weight, easily wearable, and intuitive, users experience a new level of realism as they interact with virtual environments.

Dzmitry Tsetserukou
Katsunari Sato
Alena Neviarouskaya
Naoki Kawakami
The University of Tokyo

Susumu Tachi
Keio University

MemoIcon: Using Everyday Objects as Physical Icons

MemoIcon increases productivity with a new interaction method based on pattern recognition and multi-touch techniques. It easily binds virtual information to everyday real objects and transforms them into physical icons that embody virtual tasks as tangible items. Virtual information becomes tangible and physically present.

The system is easy to learn, because the iconifying process is similar to using a post-it memo. To make a physical item a MemoIcon, users simply paste a pattern sheet under the object, and the object becomes a container that stores virtual information. Through this process of iconification, users attach personal virtual information to everyday objects, which in turn acquire personal semantic meaning.

In the future, when table-surface interaction becomes ubiquitous, this new interaction technique will bridge the virtual and physical worlds through everyday objects.

Kai-Yin Cheng
National Taiwan University

Rong-Hao Liang
National Taiwan University

Hung-Jung Lin
National Taiwan University of Science and Technology

Bing-Yu Chen
National Taiwan University

Rung-Huei Liang
National Taiwan University of Science and Technology

Ming-Yang Yu
National Taiwan University

Hao-Hua Chu
National Taiwan University

Yu-Ming Chu
Unison Art Association

Sy-Yen Kuo
National Taiwan University

Emerging Technologies Talks

Saturday, 19 December
2:15 PM–4:00 PM | Room 413

Beyond Pixels: New Display Technologies

The means to display computer graphics are evolving rapidly. This session features new techniques for capturing and reproducing visual information, including high-dynamic-range images, three-dimensional pictures, and displays with embedded interaction.

Light Field Copy Machine

This combination of future displays and future cameras copies 4D light fields just as a 2D copy machine reproduces text and images on a sheet of paper. Attendees can use the system to capture light fields and copy "real" objects.

The system consists of two technical features:

1. A camera array that uses computational photography to capture 4D light fields.

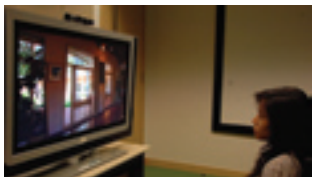
2. A dense, massive, tightly calibrated cluster of micro projectors that reproduces captured light fields on a wide-field autostereoscopic display.

The project demonstrates how life will change when light-field copiers are available in homes and offices.

Takafumi Koike
Hideyuki Sakai
Takuma Shibahara
Michio Oikawa
Masami Yamasaki
Hitachi, Ltd.

Kei Utsugi
Hitachi, Ltd., The University of Tokyo

Eye HDR: Gaze-Adaptive System for Displaying High-Dynamic-Range Images



The human visual system (HVS) uses several methods to interactively adapt to the incredible real-world range of light intensities, continually changing to effectively perceive visual information. Eye HDR is a new approach to the problem of displaying high-dynamic-range (HDR) content on low-dynamic-range displays. Instead of creating a single static image, it uses a dynamic display system to naturally, interactively adapt to the user's view, just as the HVS changes depending on the environment.

Though the dynamic range of commercial displays is gradually increasing, HDR display devices are not yet commercially available. Even if HDR display technology becomes prevalent, the majority of today's devices only show content in a low dynamic range. Eye HDR effectively offloads some of the range compression and compensation that is done by the HVS onto the display system to perceptually increase the dynamic range. It models the global-adaptation mechanism, the cone receptors and their networks, the photoreceptor bleaching process, and the transitional latency of the HVS to create a display capable of dynamically showing HDR content in a natural manner.

Susanto Rahardja
Farzam Farbiz
Corey Manders
Huang Zhiyong
Jamie Ng Suat Ling
Ishtiaq Rasool Khan
Ong Ee Ping
Song Peng
*Institute for Infocomm Research, A*STAR*

High-Dynamic-Range Video Solution

The natural world presents our visual system with a wide, ever-changing range of colors and intensities. Existing video cameras are only capable of capturing a limited part of this wide range with sufficient resolution. High-dynamic-range (HDR) images can represent most of the real world's luminances, but until now capturing HDR images with a linear-response function has been limited to static scenes. This demonstration showcases a novel complete HDR video solution.

This HDR video solution should be of great interest to cinematographers. The camera accurately captures real-world lighting, from lions moving in deep shadow on the bright African veldt to recording surgery with its vast range of lighting from dark body cavities to bright operating-theater lights. In addition, HDR video content can be incorporated into dynamic visualization systems, allowing virtual objects to be viewed under dynamic real-world settings. So, for example, rather than taking a physical mock-up of a proposed new car to a remote location to produce advertising material, a camera crew can take the HDR video system to the location and capture the desired lighting and environment, including any moving objects (such as clouds, people, etc.), then combine the video material with the car CAD model and paint BRDFs to produce highly compelling imagery.

Alan Chalmers
University of Warwick

Gerhard Bonnet
Spheron VR

Francesco Banterle
Piotr Dubla
Kurt Debattista
University of Warwick

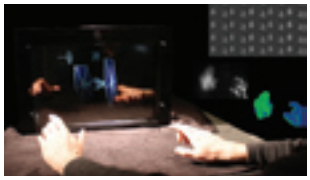
Alessandro Artusi
CASToRC Cyprus Institute

Christopher Moir
University of Warwick

Emerging Technologies Talks

Saturday, 19 December
2:15 PM–4:00 PM | Room 413

BiDi Screen: A Thin, Depth-Sensing LCD for 3D Interaction Using Light Fields



An LCD screen is transformed into a BiDi (bidirectional) screen to support 2D multi-touch and walk-up 3D gesture interaction. An image sensor placed a small distance behind an LCD forms a mask-based light-field camera, allowing passive depth estimation. The BiDi screen also supports novel mixed-reality rendering with external light-emitting widgets that light a virtual scene.

The BiDi Screen, inspired by emerging LCDs that use embedded optical sensors to detect multiple points of contact, is capable of both image capture and display. The project explores the spatial light-modulation capability of LCDs to allow dynamic mask-based scene capture without interfering with display functionality.

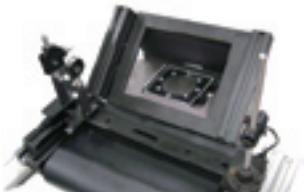
The system alternately switches between a display mode showing traditional graphics and a capture mode in which the backlight is disabled, and the LCD displays a pinhole array or an equivalent tiled-broadband code. The BiDi screen captures an array of images equivalent to that produced by an array of cameras spanning the display surface. The recovered multi-view orthographic imagery is used to passively estimate scene depth, supporting real-time 3D gesture interaction.

Matthew Hirsch
MIT Media Lab

Douglas Lanman
Brown University

Henry Holtzman
Ramesh Raskar
MIT Media Lab

Airflow Interaction With Floating Images

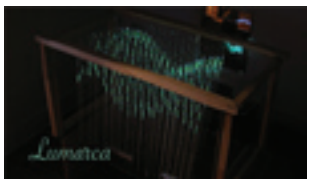


This new optical device forms virtual images that appear to float in the air. In combination with a contact-less airflow detector, it provides a new method of interaction. The floating image reacts when users blow air into it. For example, an image of a flame flutters or dies, or dandelion seeds are dispersed in the "wind". In another modality, users "touch" the image, and the finger position is sensed by an infrared screen

In future applications, airflow interaction will be enhanced by improving detection of position, direction, and intensity in the air puffs. This new technique could open up new interaction methods in visualization, games, simulations, augmented reality, and other areas.

Satoshi Maekawa
Sandor Markon
National Institute of Information and Communications Technology

Lumarca



Lumarca (latin for "light box") is a truly volumetric display that allows viewers to see three-dimensional images. The system requires only a computer, a projector, and common materials found at most hardware stores. It is an attempt to put the power of true volumetric display in the hands of do-it-yourself artists.

With the advent of the motion picture, flat representations became dynamic and able to simulate motion for the human eye. Over time, through films, television, and animation, the range of dynamic two-dimensional content has expanded, but there has been much less progress in production of dynamic three-dimensional content. Because it is simulated content rendered on a flat screen, the image does not change as the viewer's position changes. Perspective is set by a virtual camera inside the program, and perspective changes only when the camera is moved. And multiple viewers share the same perspective, even though they are not in the same position relative to the image.

Displays that allow for different perspectives of the same virtual image in three dimensions are known as "volumetric displays". Recent advances have moved these displays from the realm of science fiction to reality, but they are still very limited and very expensive. One technique involves pulsed infrared lasers and plasma. Another involves a rotating LED grid that changes as the surface rotates and relies on the persistence of vision to create the illusion of a 3D image.

Lumarca is a volumetric display that is well within reach of the DIY enthusiast. It uses affordable materials and comes with an extensive open-source library that combines calibration and construction processes to reduce construction effort. This library also makes it easy to produce content to display on any Lumarca.

Matthew Parker
New York University

Emerging Technologies
High-Speed Internet Presentations

Various Times and Locations

Networked Dome Theater

Thursday, 17 December 2009 | 09:30–18:00
Friday, 18 December 2009 | 09:30–18:00
Saturday, 19 December 2009 | 09:30–18:00
Exhibition Hall B

This demonstration of very-high-resolution images in a nine-meter dome is presented by the Graduate School of Media Design, Keio University in collaboration with other organizations. It features spherical images of a total solar eclipse and other phenomena provided by a 4K projector streaming over a 10-gigabit network from a remote dome environment in Osaka.

Naohisa Ohta
Keio University

Masaharu Suzuki
Goto Inc.

Keishi Kandori
Asahi Broadcasting Corporation

Mitsuru Maruyama
NTT Network Innovation Laboratories

Masahito Sato
JVC Kenwood Holdings

Live Microscope Streaming from USC School of Cinematic Arts

Thursday, 17 December | 13:00–14:00
Room 411/412

Live high-definition images of common pond-water micro-organisms and the surfaces of some common objects streamed from a RED One camera interfaced to an optical microscope at the University of Southern California School of Cinematic Arts in Los Angeles.

The images are captured live at 720P, 30 frames per second, up-converted to 1080i, then converted to IP for transmission to Yokohama, where the IP feed is converted to HD and projected live in the theater. While the transmission is taking place, the images are also being recorded at 4k resolution for later viewing and analysis. This demonstration illustrates how a group at a distant location can participate in a discussion about subjects under the microscope via high-speed research networks in real time. It is the first trans-Pacific demonstration of streaming live RED One camera images from a microscope.

Richard Weinberg
USC School of Cinematic Arts

Naohisa Ohta
Keio University

Emerging Technologies Committee

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Lars Erik Holmquist
Swedish Institute of Computer Science and Södertörn University

JURY

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HIT Lab New Zealand

Cynthia Breazeal
MIT Media Lab

Paul Debevec
USC Institute for Creative Technologies

Tom Igoe
New York University

Jun Rekimoto
The University of Tokyo

Kimiko Ryokai
University of California, Berkeley

Albrecht Schmidt
University of Duisburg-Essen

Annika Waern
Interactive Institute

Sketches

Thursday, 17 December

Production Session 1: Pipeline

9:00 AM–10:45 AM | Room 303/304

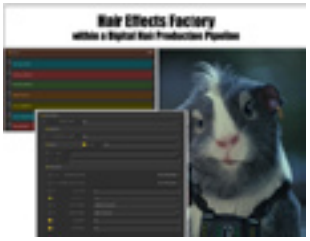
SESSION CHAIR
Jun Saito

Rich Background for Cel Animation

This sketch demonstrates seamless merger of cel animation and 3D CG scenes for a huge amount of animated objects.

Yosuke Katsura
Ken Anjyo
OLM Digital Inc.

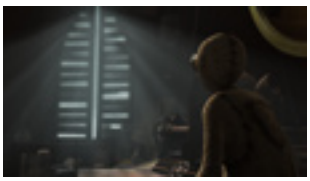
Hair Effects Factory Within a Digital Hair Production Pipeline



One unique module in this hair pipeline is the "effects factory", which allows an arbitrary number of procedurally generated geometric effects to be applied directly to the final hairs.

Armin Bruderlin
François Chardavoine
Sony Pictures Imaegworks

Pipeline and Workflow Improvement with Custom Tools for "9"



Starz Animation's pipeline improvements for creating a high-quality feature-length animation. For production of "9," the studio developed custom tools especially with regard to lighting and rendering.

Tatsuya Nakamura
Daniel Lee
Matthew Collie
Tod Baudais
Starz Animation

Earthquake! Building a Pipeline to Destroy Los Angeles in "2012"

A city-destroying multi OS, multi-application, database-driven asset pipeline.

Haarm-Pieter Duiker
Rito Trevino
Osiris Perez
Masuo Suzuki
Digital Domain

Sketches

Thursday, 17 December

Art & Sensory Interactions

9:00 AM–10:45 AM | Room 501

SESSION CHAIR
Shigeru Owada

PHOROL: Interactive Wall Clock Art of Online Shared Snapshots

PHOROL is a networked interactive wall clock that creates original artwork from digital snapshots shared on Flickr. Each hour displays another event from the user's memories.

Daisuke Uriu
Keio University Graduate School of Media Design

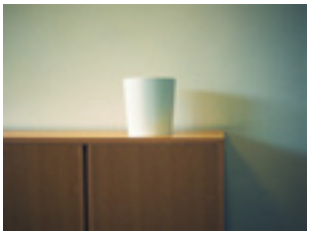
Cheers!

In Cheers! , spot music plays continuously and changes subtly as the social state varies. Musical fluctuations may unconsciously affect the participants and their interactions.

Yi-Heng Lee
Yuan Ze University

Chao-Ming Wang
National Yunlin University of Science & Technology

furimifurazumi: A Lighting Device for Sensuous Media of Rainy Scenes



furimifurazumi is a lighting device that selects meteorological information. Through lighting and sound, the user intuitively assumes and feels a rainy scene.

Yasuhito Tsukahara
Keio University Graduate School of Media Design

Formal Mutations: Pursuing Unintended Consequences

The Formal Mutations series explores emergent tectonic behaviors of art and design forms through biological analogies of morphological transformations.

Andrzej Zarzycki
New Jersey Institute of Technology

Sketches

Thursday, 17 December

2D Expressions

2:15 PM–4:00 PM | Room 501

SESSION CHAIR
Victor Ostromoukhov

Vector Fluid: A Vector-Art Representation of Fluid

This new method for vector graphics representation for artistic fluid rendering exhibits a curly, beautiful, and clear silhouette similar to marbling or sumi-nagashi.

Ryoichi Ando
Reiji Tsuruno
Kyushu University

Contour-Driven Brush Stroke Synthesis

An interactive sketch-based Oriental brush stroke simulation on complex shapes. The method introduces a contour-driven approach in which the system automatically estimates the optimal trajectory of the brush.

Ning Xie
Hamid Laga
Suguru Saito
Masayuki Nakajima
Tokyo Institute of Technology

Feature-Preserving Morphable Model for Automatic Font Generation

A font model that blends structures and outlines individually, yet maintains original style and a method to automatically generate a complete font from one input character.

Rapee Suveeranont
The University of Tokyo

Takeo Igarashi
The University of Tokyo, JST ERATO

Simulation-Based In-Between Creation for CACAni System

This method creates in-between frames for 2D hair animation based on hand-drawn key-frames by using a customized simulation model.

Eiji Sugisaki
Nanyang Technological University

Masayuki Nakajima
Tokyo Institute of Technology

Hock Soon Seah
Nanyang Technological University

Fumihito Kyota
Tokyo Institute of Technology

Sketches

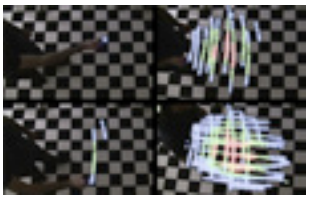
Thursday, 17 December

Haptic, Gestural, Hybrid Interfaces

4:15 PM–6:00 PM | Room 501

SESSION CHAIR
Marie-Paule Cani

Virtual Haptic Radar



A wearable device that helps actors become aware of the presence of invisible virtual objects evolving in a virtual studio.

Alexis Zerroug
Alvaro Cassinelli
Ishikawa Komuro Laboratory,
The University of Tokyo

FlexTorque: Innovative Haptic Interface for Realistic Physical Interaction in Virtual Reality

A novel haptic interface, FlexTorque, that reproduces human muscle structure to enable realistic physical interaction with objects in virtual environments.

Dzmitry Tsetserukou
Katsunari Sato
Alena Neviarouskaya
Naoki Kawakami
The University of Tokyo

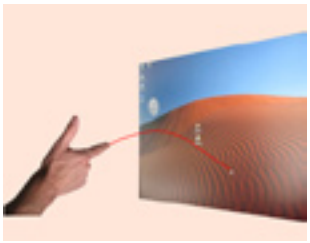
Susumu Tachi
Keio University

SixthSense: A Wearable Gestural Interface

SixthSense visually augments surfaces, walls, and physical objects with relevant, just-in-time information and allows interaction with the information via natural hand gestures. Related Emerging Technologies Project

Pranav Mistry
Pattie Maes
MIT Media Lab

Hybrid Cursor Control for Precise and Fast Positioning Without Clutching



A novel cursor positioning technique for absolute devices that enables fast and precise cursor handling without making use of a clutching mechanism.

Markus Schlattmann
Reinhard Klein
Universität Bonn

Sketches

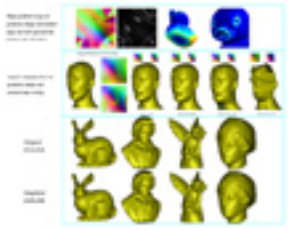
Friday, 18 December

Surface & Deformation

9:00 AM–10:45 AM | Room 501

SESSION CHAIR
Kenjiro Miura

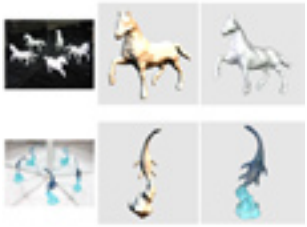
Surface Simplification by Image Retargeting



This novel algorithm simplifies 3D surfaces by retargeting geometry images to remove the insignificant details of 3D models in the 2D domain.

Shu-Fan Wang
Yi-Ling Chen
Chen-Kuo Chiang
Shang-Hong Lai
National Tsing Hua University

Robust Surface Reconstruction From Defective Point Clouds

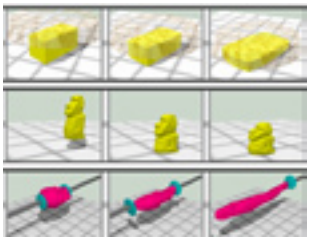


A surface modeling method that robustly reconstructs implicit surfaces from defective point clouds without orientation information.

Yi-Ling Chen
Shang-Hong Lai
National Tsing Hua University

Tomoyuki Nishita
Univeristy of Tokyo

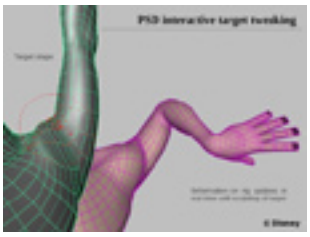
Volume-Preserving LSM Deformations



A novel volume-preserving deformation method based on LSM. This method can achieve more elastic-like motions than the original LSM while maintaining fast, robust computation.

Kenji Takamatsu
Takashi Kanai
The University of Tokyo

Pose Space Deformation With Rotation-Invariant Details



Using rotation-invariant details in a novel shape-interpolation method for articulated shapes.

Yusuke Yoshiyasu
Keio University

Sketches

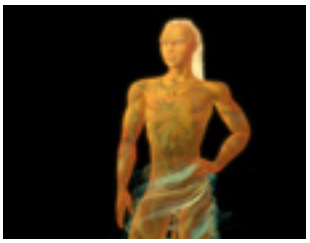
Friday, 18 December

Effects & Simulation

11:00 AM–12:45 PM | Room 501

SESSION CHAIR
Armin Bruderlin

Directable Trailing Effect

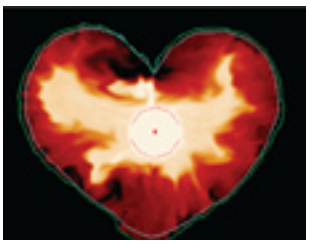


An implemented system based on particle dynamics designed for easy posing and simulation of trails in 3D space for the feature film “Quantum Quest”.

Pei-Zhi Huang
Bill Chang
Tin-Yun Lu
Digimax Inc.

Tsai-Yen Li
National Chengchi University

Controlling Explosion Simulation

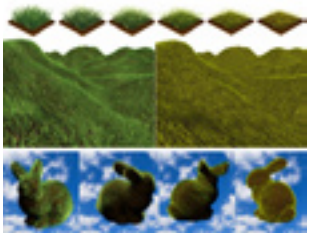


A method for controlling explosion simulation so that the final shape of an explosion becomes a target shape specified by the user.

Yoshinori Dobashi
Shuhei Sato
Tsuyoshi Yamamoto
Hokkaido University

Ken Anjyo
OLM Digital Inc.

Realistic Grass-Withering Simulation Using Time-Varying Texels



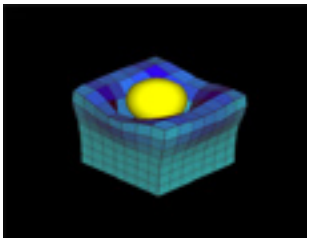
Using the novel concept of time-varying texels to achieve the first realistic simulation of grass withering.

Shaohui Jiao
Institute of Software, Chinese Academy of Sciences

Pheng Ann Heng
Chinese University of Hong Kong

Enhua Wu
Universidade de Macau and Institute of Software, Chinese Academy of Sciences

Elasticity Change Model by Liquid Flow in Porous Media



A model that includes elasticity variations generated by liquid flow in a material that has internal pore space.

Hirotoshi Ashida
Yoshihiro Kuroda
Masataka Imura
Yoshiyuki Kagiyama
Osamu Oshiro
Osaka University

Sketches

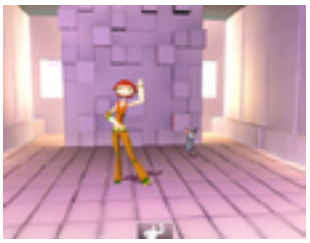
Friday, 18 December

Motion Analysis & Synthesis

2:15 PM–4:00 PM | Room 501

SESSION CHAIR
Arno Zinke

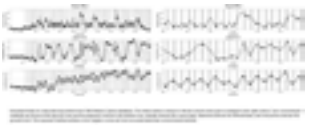
Markerless Motion Capture Using a Single-Depth Sensor



A robust framework for tracking skeleton joints in real time by using a single time-of-flight depth sensor.

Amit Bleiweiss
Eran Eilat
Gershom Kutliroff
Omek Interactive

Motion Beat Induction Based on Short-Term Principal Component Analysis



A novel tool called short-term PCA, which successfully extracts motion beats not only from simple motions, but also from complicated dance motions.

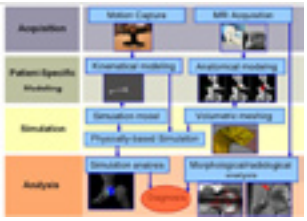
Jianfeng Xu
Akio Yoneyama
Koichi Takagi
KDDI R&D Laboratories Inc.

Designing Motion Graphs for Video Synthesis by Tracking 2D Feature Points

An intuitive and straightforward method for synthesizing videos by manipulating objects without 3D models. The approach enables users to directly control detailed motions of a video object.

Jun Kobayashi
Shigeo Takahashi
The University of Tokyo

Physically Based Simulation of a Ballet Dancer's Hip



A methodology for simulating the mechanical behavior of the hip, based on computer graphic techniques and patient-specific anatomical-kinematical models. This approach offers orthopedists a supplementary tool for diagnosis.

Lazhari Assassi
Pasacl Volino
Nadia Magnenat-Thalmann
MIRALab, Université de Genève

Sketches

Friday, 18 December

Visualization

4:15 PM–6:30 PM | Room 501

SESSION CHAIR
Bing-Yu Chen

An Esthetics Rule-Based Ranking System for Amateur Photos

This esthetics rule-based ranking system for amateur photos is based on the experiences of photographers around the world.

Che-Hua Yeh
Wai-Seng Ng
National Taiwan University

Brian A. Barsky
University of California, Berkeley

Ming Ouhyoung
National Taiwan University

Tuvalu Visualization Project

The purpose of this artistic visualization project on Google Earth is to disclose information about Tuvalu. It has two components: Build the Future with 10,000 Tuvaluans and Tuvalu Mapping.

Makiko Suzuki
Yuichi Watanabe
Hidenori Watanave
Hidenori Watanave Laboratory, Tokyo Metropolitan University

Shuichi Endo
NPO Tuvalu Overview

Hidewnori Watanave
Hidenori Watanave Laboratory, Tokyo Metropolitan University

Development of an RFID Textile for Location-Aware Systems

Many interactive user interfaces require the user's location. This RFID textile, which can be commercially woven, provides easy installation of location sensing.

Ryoko Ueoka
The University of Tokyo

Atsuji Masuda
Tetsuhiko Murakami
Industry Technology Center of Fukui Prefecture

Michitaka Hirose
The University of Tokyo

A Robust and Dynamic Scene Geometry Acquisition Technique for a Mobile Projector-Camera System

A new structured light-pattern-generation technique for a mobile projector-camera system that allows acquisition of scene geometry from an image with relatively high acquisition density.

Vinh Ninh Dao
Masanori Sugimoto
The University of Tokyo

Automatic Generation of 3D Building Models With Various Shapes of Roofs

A GIS- and CG-integrated system that automatically generates 3D building models, including a temple roof and a pagoda roof, based on building contours on digital maps.

Kenichi Sugihara
Gifu Keizai University

Sketches

Saturday, 19 December

Image & Video Processing

9:00 AM–10:45 AM | Room 501

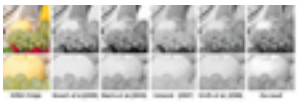
SESSION CHAIR
Tien-Tsin Wong

HVS-Based Histogram Adjustment for Global Tone Mapping

A new tone-mapping technique based on Ward's histogram adjustment with some fundamental changes. Experimental results show better performance compared to state-of-the-art techniques.

Ishtiaq Rasool Khan
Zhiyong Huang
Farzam Farbiz
Corey Manders
Susanto Rahardja
*A*STAR Institute for Infocomm Research*

An Effective Grayscale Conversion With Applications to Image Enhancement



Introducing an effective decolorization technique that preserves the initial chromatic contrast. This method has proven to be useful for several image-enhancement applications.

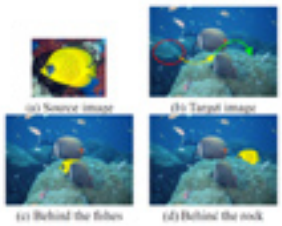
Codruta Ancuti
Cosmin Ancuti
Philippe Bekaert
Universiteit Hasselt

Poisson Compositing

Differently exposed images must be composited to faithfully represent a real-world scene. This sketch proposes a gradient domain-compositing technique to solve this multi-exposure compositing problem.

Shanmuganathan Raman
Subhasis Chaudhuri
IIT Bombay

Interactive Image Composition Through Draggable Objects



A method to composite new objects into images behind existing objects using a dragging interface.

Yuichiro Yamaguchi
Takuya Saito
The University of Tokyo

Yosuke Bando
*The University of Tokyo,
TOSHIBA Cooperation*

Bing-Yu Chen
National Taiwan University

Tomoyuki Nishita
The University of Tokyo

Sketches

Saturday, 19 December

Production Session 2: Research & Technique

9:00 AM–10:45 AM | Level 5–Auditorium

SESSION CHAIR
Yoshinori Dobashi

Enhancing Organic Visual Effects While Simplifying Rotoscoping Techniques

This camera setup for simultaneously capturing both visible and thermal data when filming live-action scenes provides data that can be used as an efficient method of rotoscoping.

Hannes Appell
Sebastian Schmidt
Nicolas Palme
Institute of Animation, Visual Effects and Digital Postproduction

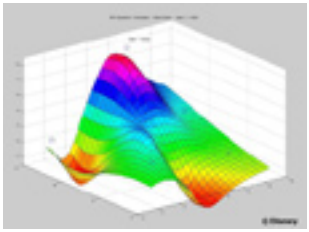
Identifying Salient Points

By defining important points on a shape as those that are predictive of other points, these algorithms automatically identify such points. Applications include shape representation and simplification.

J.P. Lewis
Weta Digital

Ken Anjyo
OLM Digital Inc.

Evaluation of the Radial Basis Function Space



The behavior of a radial basis function depends on its definition. For technical directors, the relationship between definition and behavior is not intuitive. This sketch suggests visualizations that will help TDs understand RBF.

Gene Lee
Walt Disney Animation Studios

Sketches

Saturday, 19 December

Japanese Session 1: Stimulation & Art

9:00 AM–10:45 AM | Room 416/417

SESSION CHAIR
Makoto Okabe

氷塊融解の粒子ベースリアルタイムシミュレーション

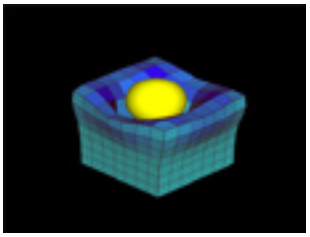
融解後の水を考慮した氷塊融解のシミュレーション法を提案する.

Kei Iwasaki
Hideyuki Uchida
Wakayama University

Yoshinori Dobashi
Hokkaido University

Tomoyuki Nishita
The University of Tokyo

多孔質体の液体流出入による弾性変化モデリング



多孔質体は吸水性という特徴をもち、内部に液体が流入することによって柔らかくなる。本研究では、液体の流出入によって生じる、多孔質体弾性変化のモデリング手法を提案する。

Hirotoshi Ashida
Yoshihiro Kuroda
Masataka Imura
Yoshiyuki Kagiyama
Osamu Oshiro
Osaka University

Vector Fluid : ベクタ形式による美しい流れ模様の生成

本研究は美しくクリアなパターンを表現することを目的とした新しい流体レンダリング方法の提案である。流体をベクタとして記述することで、マーブリングや墨流しのような渦巻き状の流れを計算し発生させることが可能である。

Ryoichi Ando
Reiji Tsuruno
Kyushu University

PHOROL: Interactive Wall Clock Art of Online Shared Snapshots

本作品は人々が撮影した写真から芸術作品を産み出す柱時計です。

Daisuke Uriu
Keio University Graduate School of Media Design

Sketches

Saturday, 19 December

Real-Time Dragons

11:00 AM–12:45 PM | Room 501

SESSION CHAIR
Takashi Kanai

Real-Time Horizon-Based Reflection Occlusion

A real-time screen-space method to calculate reflection occlusion. This fast method can handle dynamic scenes, variational lighting environments, and changing views.

Xin Zhao
Xubo Yang
Shanghai Jiao Tong University

Real-Time Visual Simulation of Ice Melting, Taking Into Account Meltwater

A real-time visual simulation of melting ice and flows of meltwater on the ice.

Kei Iwasaki
Hideyuki Uchida
Wakayama University

Yoshinori Dobashi
Hokkaido University

Tomoyuki Nishita
The University of Tokyo

CUDA Renderer: A Programmable Graphics Pipeline

A fully programmable graphics pipeline that uses CUDA without any hardware modifications. This approach offers siginificant speedup, especially on order-independent transparencies.

Fang Liu
Meng-Cheng Huang
Xue-Hui Liu
Institute of Software, Chinese Acadamy of Sciences

En-Hua Wu
Institute of Software, Chinese Acadamy of Sciences and Universidade de Macau

Sketches

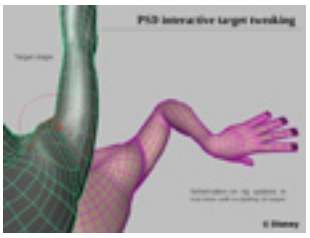
Saturday, 19 December

Production Session 3: Characters

11:00 AM–12:45 PM | Level 5–Auditorium

SESSION CHAIR
J.P. Lewis

Practical Experiences with Pose-Space Deformation



Pose-space deformation (PSD) is a shape-interpolation technique for animation. This sketch presents some practical experience with PSD acquired while creating the film "Bolt".

Gene Lee
Frank Hanner
Walt Disney Animation Studios

Crowd Simulation in "Astroboy"

A behind-the-scenes exploration of crowd-simulation production in "Astroboy".

Edric Tse
Justin Lo
Imagi Animation Studios

Fetching Expressions: Throwing Realism to the Dogs in "Up"

Examining how caricatured design combined with an understanding of physiology created comedic yet believable expressions for Gamma the English bulldog.

Sonoko Konishi
Pixar Animation Studios

Preventing Tangled Cloth

Geometric pinching can result in cloth simulation results that are a tangle of cloth. This technique eliminates pinching problems prior to cloth simulation.

David Tonnesen

Sande Sorcedos
Sony Pictures Imageworks

Sketches

Saturday, 19 December

Japanese Session 2: Modeling & Deformation

11:00 AM–12:45 PM | Room 416/417

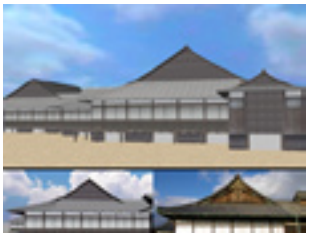
SESSION CHAIR
Shigeo Takahashi

様々な形態の屋根を持つ3次元建物モデルの自動生成

屋根付き建物モデルは、重要な情報インフラである「3次元都市モデル」の主要な構成要素である。現状では、様々な形態の屋根付き3次元建物モデルを製作するには、3次元CGソフトを用いた多大の労力と時間が必要である。本研究では、これまでの研究成果、「3次元都市モデル自動生成システム」を発展させ、「朱雀門」や「五重塔」などの複雑な形態をとる屋根を持つ建物モデルを自動生成する手法を提案する

Kenichi Sugihara
Gifu Keizai University

江戸の町並み復元のための木造家屋のモデリング法



江戸時代後期の町並みを3DCGにより復元している。大規模で複雑な木造家屋を復元するために、その構造を記述する言語とモデリングツールを開発した。また、平面図から屋根を含めて家屋を半自動復元したり、木材部分の経年変化をしたりする機能も実現した。

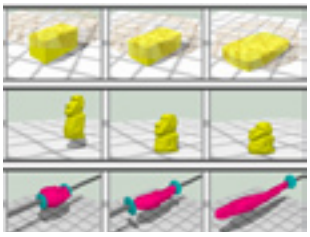
Shunya Kimura
Souichiro Sunagawa
Akio Sakuma
Tomoaki Yasu
Dai Katsumura
Tomohiro Tanimura
Kaori Aoki
Satoru Takahashi
Tomoaki Moriya
Tokiichiro Takahashi
Tokyo Denki University

回転不変量を用いた関節構造を有するモデルの補間手法

本研究では, 関節構造を有するモデルの新たな補間手法を提案する. 本手法では, 三角形メッシュから定義した回転不変量を直接補間するため, 従来のpose space deformationのようにスキニングを用いて初期形状を得る必要がなく, 処理を簡略化できる。

Yusuke Yoshiyasu
Keio University

体積保存を導入したLSM法変形



LSM法に体積保存を導入しより妥当性の高い手法を提案する。

Kenji Takamatsu
Takashi Kanai
The University of Tokyo

Sketches

Saturday, 19 December

VR, MR, 3D Video

4:15 PM–6:30 PM | Room 501

SESSION CHAIR
Diego Gutierrez

Cyberscape Modeling Techniques for Wooden Buildings of the Edo Era

This sketch proposes several techniques for efficient modeling of large-scale wooden buildings. The approach was used for restoration of a city landscape of the Edo era.

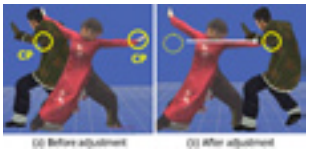
Shunya Kimura
Souichiro Sunagawa
Akio Sakuma
Tomoaki Yasu
Dai Katsumura
Tomohiro Tanimura
Kaori Aoki
Satoru Takahashi
Tomoaki Moriya
Tokiichiro Takahashi
Tokyo Denki University

Minimal 3D Video

This work promotes a new concept to achieve 3D reconstruction of models in motion using a minimal camera setting, which makdes 3D video accessible to a larger audience.

Tony Tung
Takashi Matsuyama
Kyoto University

Constructing Action Scenes for Mixed-Reality Previsualization



A construction method for consistent action-scene data of CG charactors that merges one actor's action sequences with time and space consistencies.

Ryuhei Tenmoku
Fumihisa Shibata
Hideyuki Tamura
Ritsumeikan University

A Virtual Kanji Puzzle Game Based on 3D Graphics and an Intuitive Input Device

This virtual Kanji puzzle game represents the primitive features of the Kanji system, so that every word is a combination of several basic parts.

Qinglian Guo
Kanazawa Institute of Technology

Virtual Reality Environment to Assist Recovery From Stroke

This virtual environment represents the pre-clinical phase of an ongoing research project that uses a pneumatic glove, head and arm tracking, and a head-mounted display to assist hand rehabilitation for stroke patients.

Daria Tsoupikova
University of Illinois at Chicago

Nikolay Stoykov
Rehabilitation Institute of Chicago

Randy Vick
School of the Art Institue of Chicago

Sketches

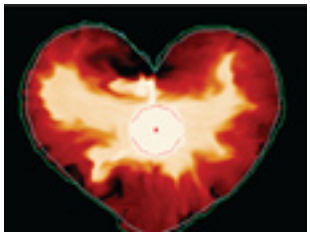
Saturday, 19 December

Japanese Session 3: Effects Okonomiyaki

4:15 PM–6:30 PM | Room 416/417

SESSION CHAIR
Ryusuke Villemin

爆発シミュレーションのコントロール



ユーザの指定した形状となるよう爆発のシミュレーションを制御する手法を提案する. 将来時刻での爆発の形状を予測することで高精度な制御を実現する。

Yoshinori Dobashi
Shuhei Sato
Tsuyoshi Yamamoto
Hokkaido University

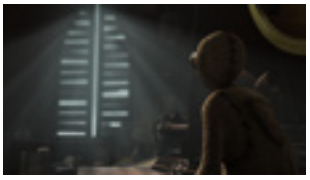
Ken Anjyo
OLM Digital Inc.

Fetching Expressions: Throwing Realism to the Dogs in "Up"

ブルドッグ・ガンマの描写において、犬の生態を理解し戯画化されたキャラクターがもたらす、コミカルながらも自然な表情を検証します。

Sonoko Konishi
Pixar Animation Studios

メイキング「9」- カスタムツールによるパイプラインとワークフローの改良



Starz Animationのトロントスタジオにおけるツール開発とその成果。長編映画「9(ナイン)」を製作するために、パイプラインを改良することで短期間で高品質な作品を完成。特に汎用シェーダプログラムによりマテリアルおよびテクスチャ作業のワークフローを向上させ、合成ツール上でライティングを行うことでレンダリング作業までを効率化しました。

Tatsuya Nakamura
Daniel Lee
Matthew Collie
Tod Baudais
Starz Animation

背景表現のための手描き風CGアニメーション

静止画を用いることが多いセルアニメの背景画ですがCGを使うことでより豊かな表現が可能になります。手描きとCG画像のなじませ方を中心に制作例を紹介します。

Yosuke Katsura
Ken Anjyo
OLM Digital Inc.

CACAni システムにおけるシミュレーションベースの中割りフレーム作成

セルアニメーションの作成支援を目的として、アニメータの描いたキーフレームを基に、その間の中割りフレームをシミュレーションベースで自動生成する手法を提案し、特に風や頭部の運動などによって生じる頭髪アニメーションに対して適用した結果を示す。

Eiji Sugisaki
Nanyang Technological University

Masayuki Nakajima
Tokyo Institute of Technology

Hock Soon Seah
Nanyang Technological University

Fumihito Kyota
Tokyo Institute of Technology

Posters

Level 3–Lounge

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Friday, 18 December	09:30 - 18:00
Saturday, 19 December	09:30 - 18:00

Posters Presentations: Level 3–Lounge

Thursday, 17 December | 13:30–15:00

Art & Design

Introducing a Current-Based Interactive Plant

A new method for interacting with both organisms and objects, using the change in current generated by user gestures.

Sungjae Hwang
Kibeom Lee
Woonseung Yeo
Korea Advanced Institute of Science and Technology

Form-Making in Architecture: Performance and Simulation-Based Design Approach

Integration of tectonic architectural studies and building-performance simulations with dynamics-based tools. This form-generation method promises greater design integrity in architecture.

Andrzej Zarzycki
New Jersey Institute of Technology

A Sound Brush Made of Bamboo

A study of a black-and white drawing expressed through a digital algorithm.

Young-Mi Kim
Jong Soo Choi
Chung-Ang University

A Content-Based Synchronization Approach for Timing Description in Enhanced TV

For more efficient synchronization of enhanced TV content, this poster proposes a content-based synchronization technique in which data content varies depending on the video content.

Hyun Jeong Yim
Sookmyng Women's University

Yoon Chul Choy
Yonsei University

Soon Bum Lim
Sookmyng Women's University

Green-i: An Interactive Reusable Brochure Paper for Eco-Touring

An interactive brochure paper that integrates the concepts of sharing and reuse in eco-touring activities.

Ying Wei Toh
Dong Kyun Kang
Jihong Jeung
Song Yee Baik
Soo A Park
Seul Ye Bhang
Ji Yong Kim
Mi Hwa Chang
Kang Min Kim
Young Hwan Pan
Kookmin University

Learning by Example for Parametric Font Design

A novel learning-based font model for knowledge representation and processing of parametric font design, including a graphical font editor with direct graphical manipulation.

M.K. Lau
The University of Hong Kong

Feeling Time by Compositing Multi-Vision and Generating Sounds

An interactive installation that allows users to experience the flow of time through a multi-webcam of vision and generate sounds by synthesizing sonic tones.

Yi-Hsiu Chen
Wen-Shou Chou
Yuan Ze University

fluff: Illuminating Blimps and Music

In this exhibition (fluff), multiple blimps with light-emitting diodes (LEDs) illuminate a space in coordination with music.

Hideki Yoshimoto
Koichi Hori
The University of Tokyo

Posters

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Animation

Qualitative Evaluation of Quantitative Dance-Motion Data

In this method for automatically summarizing the qualitative trend in a group of quantitative dance-motion data, the motion features are first quantitatively extracted and then qualitatively categorized.

Takeshi Miura
Akita University

A Sketching Interface for Region Matching in 2D Cartoon Coloring

With only a few strokes, users of this sketch-based interface for effectively coloring 2D cartoon animations can color multiple frames more easily than with point-and-click methods.

Pablo Garcia Trigo
The University of Tokyo

Henry Johan
Nanyang Technological University

Takashi Imagire
Tomoyuki Nishita
The University of Tokyo

The Squash-and-Stretch Filter for Character Animation

A new way of superimposing non-rigid squash-and-stretch effects on the motion of a rigid linkage by applying a time-shift filter to position the data of each joint individually.

Ji-Yong Kwon
In-Kwon Lee
Yonsei University

A Deformable Model of Soap Film That Considers Physical Properties

A deformable model of soap film that considers its physical properties and discrete differential geometry.

Min Ki Park
Gwangju Institute of Science and Technology

Real-Time Two-Way Coupling of Fluids to Deformable Bodies Using a Particle Method on GPU

This two-way coupling method between fluid and deformable bodies uses a particle method to conserve the momentum of the coupled system and increase its stability.

Kazuhiko Yamamoto
Kyushu University

Visual Simulation of Solar Prominence Based on Magnetohydrodynamics

A new method for visual simulation of plasma fluids such as solar prominence. The method solves the magnetohydrodynamics equations efficiently and is fully physically based.

Tomokazu Ishikawa
Yonghao Yue
Yoshinori Dobashi
Hokkaido University

Tomoyuki Nishita
The University of Tokyo

Visual Simulation of Avalanches Using Layered Structure

This method for simulating the motion of an avalanche accounts for its layered structure and reproduces characteristic avalanche phenomena.

Yusuke Tsuda
Tomoyuki Nishita
The University of Tokyo

Yoshinori Dobashi
Hokkaido University

Yonghao Yue
The University of Tokyo

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Production

"Astroboy": Breaking Complex Geometries With Voronoi Diagram

In "Astroboy", breaking geometries is very common, so this three-phrase fracturing system was developed to automate the breaking process and maintain a certain level of user control.

Christopher Justin Lo
Chi Lik Elton Lau
Wai Kit Ricky Cheung
Imagi Animation Studios

Multi-Point Expansion at Render Time

A multi-point system that creates additional points at render time from a small set of simulated particles.

Marcelo Maes
Shuntaro Furukawa
Daniel Ferreira
Jun Saito
Sega Sammy Visual Entertainment Inc.

Production Tools for Furry Characters

A series of fur tools that enhance styling freedom and optimize rendering.

Kengo Takeuchi
Nick Petit
Gaetan Guidet
Marcelo Maes
Sega Sammy Visual Entertainment Inc.

Asset-Management System for Digital Production Workflow

An asset-management system that enables sharing, manipulation, and version management of various digital data in the OLM Digital production workflow.

Tatsuo Yotsukura
Miki Kinoshita
Satoru Yamagishi
Kazuyuki Ishihara
Yoshinori Moriizumi
OLM Digital Inc.

Volumetric Texture for Fissure in "2012"

A technique used in the feature film "2012" for generating 3D volumetric texture from 2D images.

Tadao Mihashi
Haarm-Pieter Duiker
Digital Domain

Posters

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Interaction

A Smart Agent for Taking Pictures

This research suggests a novel photo-taking system that can interact with people. The goal is to develop a system that acts like a human photographer.

Hyunsang Ahn
Electronics and Telecommunications Research Institute

Jihwan Park
Korea Advanced Institute of Science and Technology

Manjai Lee
Il-kwon Jeong
Electronics and Telecommunications Research Institute

Evaluating an Operation Plan for a Large Crawler Crane

This method for efficiently evaluating an operation plan for a large crawler crane calculates its motion path candidates to avoid interferences and conform to its lifting capacity.

Yoshibumi Fukuda
Hitachi Research Laboratory

Chaos Experience: Experiencing Chaos Theory by Visualization and Installation

Chaos Experience, an experimental tool for understanding “chaotic itinerancy”, uses visualization and installation implemented by processing.

Kohei Yamashita
Keio University

A Split-Marker Tracking Method Based On Topological Region Adjacency & Vector Information For Interactive Card Games

This novel technique for split-marker tracking based on topological region adjacency and vector information is mainly targeted at interactive card games or card-based interaction application research.

Hiroki Nishino
National University of Singapore

AnEfficient Shading System Based on Similar Shader Retrieval

This poster proposes the INISIS (Intuitive and Interactive Shading Interface System), an efficient shading system based on similar shader retrieval.

Jae-Ho Lee
Hee-Kwon Kim
Seung-Woo Nam
Electronics and Telecommunications Research Institute

Keysquare: Minimized Keyboard for All Devices

Keysquare input technology is a revolutionary way of implementing full keyboard functionality, which can be applied to virtually any language.

Vincent Lau
Yiu Lung Lai

An Ice Rescue Support System

A system that supports decisions of rescuers after an accident on an icy lake accident. A physics-based approach considers lake morphology to predict dangerous ice zones.

Carlos Madrazo
Takeshi Tsuchiya
Waseda University

Hiroaki Sawano
AISIN AW CO., LTD.

Keiichi Koyanagi
Waseda University

Interactive Taiwanese Hand Puppetry as a Learning Tool for Traditional Heritage

Integrating interactive and digital media to create a new form of hand puppetry that is more entertaining and educational.

Chi-Wei Lee
Cheng-Tse Wu
Shu-Ting Wu
Kuo-Pei Kao
Yuan Ze University

iSlideShow: A Seamless and Dynamic Slideshow System With Content-Based Transitions

A slideshow system that analyzes thematic information in photo collections and utilizes the information to generate compositions and transitions in storytelling and person-highlighting mode.

Jiajian Chen
Georgia Institute of Technology

Jun Xiao
Yuli Gao
HP Labs

Collision Detection for High-Resolution Deformable Objects Using a Particle-based Approach

A collision-detection method that uses a particle-based approach and a parallel primitive test for high- deformable objects.

Thiti Rungcharoenpaisal
Pizzanu Kanongchaiyos
Chulalongkorn University

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VR, AR, Visualization

Moving Integral Photography Using a Common Digital Photo Frame and Fly's-Eye Lens

A new 3D display system that uses a common digital photo frame and a fly's-eye lens.

Masahiko Yoda
Akifumi Momose
Kazuhisa Yanaka
Kanagawa Institute of Technology

Real-Time VFX For Physical Space Using Multi Sensors

With this method for realizing ubiquitous projection of real-time VFX without any special device or screen display, animations can be displayed on existing surfaces.

Kazunobu Azuma
Kuu-Kan.com Inc.

Suma Noji
Shobi University

Efficient Multi-Pass Welding Training With Haptic Teaching

A real-time, efficient, multi-pass welding process with appropriate accuracy and a haptic welding teaching interaction scheme to improve training effectiveness.

Yongwan Kim
Ungyeon Yang
Dongsik Jo
Gun Lee
Jinseong Choi
Electronics and Telecommunications Research Institute

Jinah Park
Korea Advanced Institute of Science and Technology

ThirdEye

Anew technique that enables multiple viewers to see different things on the same display screen at the same time.

Pranav Mistry
MIT Media Lab

Hybrid Outdoor Tracking Extension for the Daylight-Blocker Display

This sensor-fusion-based hybrid tracking extension for one of the first daylight-blocker displays features a sequencer to limit the overall maximum CPU share for tracking.

Pedro Santos
Hendrik Schmedt
Sebastian Hohmann
Fraunhofer-Institut für Graphische Datenverarbeitung

André Stork
Technische Universität Darmstadt

Total Solar Eclipse: Fish-Eye 4K Image Transmission Experiment on the Internet

An experiment with fish-eye 4k (3840 x 2160 pixels) resolution image transmission of the whole sky during a total solar eclipse.

Akira Yutani
Masatoshi Kakiuchi
Nara Institute of Science and Technology

Interactive Animation System for 3D Volumetric Human Models

A practical solution for building an interactive animation system for 3D volumetric human models. Users can easily control and animate the 3D avatar with handheld bar codes.

Tzung-Han Lin
Chih-Jen Teng
Fu-Jen Hsiao
Industrial Technology Research Institute

Designing Cinematic Lighting by Relighting in MR-Based Previsualization

A relighting method that allows mixed-reality-based previsualization (MR-PreViz) to use additional virtual lighting and remove actual illumination in designing cinematic lighting.

Ryosuke Ichikari
Ritsumeikan University

Uncompressed 4K2K and HD Live Transmission on the Internet

Network design and execution for uncompressed live transmission of both 4K2K (3840 x 2160 pixels) and HD (1920 x 1080 pixels) on the internet with no lost frames.

Masatoshi Kakiuchi
Akira Yutani
Nara Institute of Science and Technology

Direct 3D Manipulation for Volume Segmentation Using Mixed Reality

A novel two-handed direct-manipulation system that achieves complex volume segmentation in real 3D space with a remote controller attached to a motion-tracking cube.

Takehiro Tawara
Kenji Ono
RIKEN

Posters

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Rendering

Efficient Acquisition of Light Transport Based on Separation of Direct and Global Components

A method for acquiring light transport of a scene based on separation of direct and global illumination components.

Keiichi Ochiai
NTT DOCOMO, INC

Norimichi Tsumura
Toshiya Nakaguchi
Yoichi Miyake
Chiba University

Curling and Animating Fur Using the Layered-Textures Method

This extension of previous methods for fur rendering based on texture layers adds physically based strand animation and fur shape control.

Paulo Teixeira da Silva
Tsuneya Kurihara
Tomoyuki Nishita
The University of Tokyo

GPU-Accelerated Isosurface Volume Rendering Using Depth-Based Coherence

A novel GPU-based system that permits real-time visualization of isosurfaces in volume data. Depth-based coherence is used to speed up rendering during rotation.

Colin Braley
Robert Hagan
Yong Cao
Denis Gracanin
Virginia Polytechnic Institute and State University

A Tone-Reproduction Operator Accounting for Mesopic Vision

A tone-mapping operator for mesopic vision in which chrominance changes are perceptually uniform, decoupled from the luminance compression stage and suitable for real-time purposes.

Michihiro Mikamo
Marcos Slomp
Toru Tamaki
Kazufumi Kaneda
Hiroshima University

Granular Materials Rendering Based on Radiance Caching

A method for rendering granular materials that models the object as discrete partilces and calculates light scattering with radiance caching.

Toshihisa Yamahata
Nara Institute of Science and Technology

Non-Parametric BRDFs for Pearlescent Coatings

An optimal BRDF model that uses a non-parametric model to represent the color-shift effect of pearlescent coatings, which are widely used in various industrial products.

Myoung Kook Seo
Gwangju Institute of Science and Technology

Computer-Generated Tie-Dyeing Pattern

A novel interactive method for simulation of tie-dyeing patterns considering 3D folded-cloth geometry.

Yuki Morimoto
Ono Kenji
VCAD System Research Program, RIKEN

Photon-Density Estimation Using Multiple-Importance Sampling

Applying multiple-importance sampling to density estimation to reduce photon-map noise. The method is easy to implement, imposes low overhead, and delivers good results without nervous parameter tuning.

Yusuke Tokuyoshi

Posters

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Image & Video Processing

Color and Luminance Compensation for Producing High-Resolution Panoramic Images on Mobile Devices

This color and luminance compensation approach creates high-resolution panoramic images with better quality, fast speed, and low memory consumption in long image sequences on mobile devices.

Yingen Xiong
Nokia Research Center

Seam-Based Dynamic Programming for Stereo Matching

A content-aware stereo matching method inspired by seam carving and a bilateral grid.

Wei-Jia Huang
Chun-Te Wu
Kai-Che Liu
Industrial Technology Research Institute

Illumination Compositing for Dark Scenes

A novel and interactive, if desired, technique for compositing a single image from a video of a dark scene illuminated part-by-part by a moving light source.

Nikhil Pande
Shanmuganathan Raman
Subhasis Chaudhuri
IIT Bombay

Video Stabilization and Motion Deblurring on GPU

A GPU-based computational method for video stabilization and motion deblurring that removes unwanted vibrations and motion blur from videos.

Kenji Takahashi
Kenjiro Miura
Shizuoka University

A Contrast Perception-Matching-Based HDR Tone-Mapping Operator

This contrast perception-matching-based HDR tone-mapping operator minimizes perceptual differences between input HDR and tone-mapped LDR images.

Zhongkang Lu
Susanto Rahardja
*A*STAR Institute for Infocomm Research*

Improved Coordinate-Based Image and Video Cloning Algorithm

This improved MVC algorithm for image and video cloning provides an alternative sampling algorithm that is robust to the concave case and an effective temporal smoothing technique for video.

Sun-Young Lee
In-Kwon Lee
Yonsei University

Blind De-Ghosting for Automatic Multi-Exposure Compositing

A novel approach for determining moving objects and eliminating them while compositing multi-exposure images without awareness of camera-response function and exposure settings.

Shanmuganathan Raman
Vishal Kumar
Subhasis Chaudhuri
IIT Bombay

Synchronized Real-Time Multi-Sensor Motion Capture System

Design of a real-time system that captures human motion.

Jonathan Ruttle
Martin Prazak
Rozenn Dahyot
Michael Manzke
Trinity College Dublin

Face tracking Using Skin Detection and Parallel Kernel-Based Methods

This novel combination of template tracking and a particle filter for driving evolution of candidates on a parallel architecture achieves very high performance in a demonstration of future consumer processors.

Raúl Cabido
Antonio Montemayor
Juan Pantrigo
Universidad Rey Juan Carlos

Mario Martínez
Universidad de Valladolid

Bryson Payne
North Georgia College and State University

Image Summaries Using Database Saliency

An extension of the idea of image saliency to databases that uses the most interesting images in a database to create attractive image collages and mosaics .

Radhakrishna Achanta
Appu Shaji
Pascal Fua
Susstrunk Sabine
École Polytechnique Fédérale de Lausanne

Posters

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Modeling

Global Parameterization and Quadrilateral Meshing of Point Clouds

A framework for global parameterization of point data and application to direct conversion of a noisy point model to a quad-dominated mesh.

Li Er
Wujun Che
Weiming Dong
Xiaopeng Zhang
Institute of Automation, Chinese Academy of Sciences

Interactive 3D Modeling Based on Point Clouds with Reflectance Images

This method for generating 3D models from incomplete point clouds applies image-based modeling techniques.

Nozomi Kanata
The University of Tokyo

Toward Image-Based Beard Modeling

A novel automated technique for image-based modeling of beards. Using registered textures and 3D head models, realistic short beards are synthesized and adjusted to different head models.

Tomás Lay Herrera
Arno Zinke
Andreas Weber
Institut für Informatik II, Universität Bonn

Thomas Vetter
Institut für Informatik, Universität Basel

Human Head Modeling based on Fast Automatic Mesh Completion

A rapid 3D human-head modeling system that can automatically create the head model from frontal facial range-scan data based on fast automatic mesh completion.

Akinobu Maejima
Shigeo Morishima
Waseda University

Example-Based Skinning With Progressively Optimized Support Joints

A novel method of example-based skinning. By optimizing configurations of "support joints" and calculating vertex weights automatically, plausible skin deformation is generated with few examples.

Kentaro Yamanaka
Akane Yano
Shigeo Morishima
Waseda University

Procedural Modeling of Woven Textiles with Fuzz

This procedure generates geometries of woven textiles with controllable fuzz by modeling surface staples. The procedure also takes into account the arbitrary design that creates quadrilateral mesh.

Kaisei Sakurai
Kazuo Matsufuji
Dai Nippon Printing Co., Ltd.

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Ryan T. Smith
Starz Animation

Ryoichiro Yonekura
Advanced Media Operations, Inc.

Ryusuke Villemin
Square-Enix Co., Ltd.

Sang Il Park
Sejong University

Shahril Ibrahim
Rhythm & Hues Sdn. Bhd.

Shigeo Takahashi
The University of Tokyo

Shigeru Kuriyama
Toyohashi University of Technology

Shigeru Owada
Sony Computer Science Laboratories, Inc.

Shinsaku Arima
DreamWorks Animation

Takaaki Shiratori
Carnegie Mellon University, Disney Research Pittsburgh

Takashi Kanai
The University of Tokyo

Tien-Tsin Wong
The Chinese University of Hong Kong

Tomohiko Mukai
Toyohashi University of Technology

Veronica Sundstedt
Trinity College Dublin

Victor Ostromoukhov
Université de Montréal, Université Claude Bernard Lyon 1

Wojciech Jarosz
Disney Research Zürich

Yong Cao
Virginia Polytechnic Institute and State University

Technical Papers

ACM Town Hall Meeting

Friday, 18 December | 18:00–19:30

Room 301/302

Due to budgetary constraints and high printing costs, ACM SIGGRAPH is considering a plan to discontinue the printing of the two yearly conference proceedings issues of ACM Transactions on Graphics. You are invited to this Town Hall meeting to hear the details and express your opinions on this plan.

Technical Papers Fast Forward

Wednesday, 16 December, 18:00–20:00

Level 1, Main Hall

An entertaining, illuminating summary of SIGGRAPH Asia 2009 Technical Papers in one exciting, fun-filled hour! Authors are allowed a little less than a minute to wow the crowd with their results and entice attendees to hear their complete paper presentation later in the week.

Technical Papers

Thursday, 17 December

Texturing

9:00 AM–10:45 AM | Room 301/302

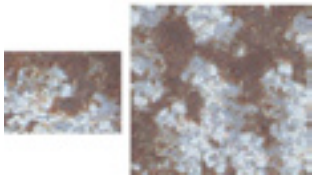
SESSION CHAIR
Kartic Subr

TOG ARTICLE 107
Layered Shape Synthesis: Automatic Generation of Control Maps for Non-Stationary Textures

A novel example-based synthesis method for inhomogeneous textures based on decomposing the input texture into layers, using shape synthesis to produce new layers and letting them guide the synthesis.

Amir Rosenberger
Daniel Cohen-Or
Tel Aviv University

Dani Lischinski
Hebrew University



TOG ARTICLE 108
Feature-Aligned Shape Texturing

Exploring the use of salient curves in synthesizing natural-looking, shape-revealing textures on surfaces.

Kai Xu
Simon Fraser University,
National University of Defense Technology

Daniel Cohen-Or
Tel Aviv University

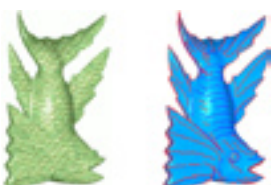
Tao Ju
Washington University in St. Louis

Ligang Liu
Zhejiang University

Hao Zhang
Simon Fraser University

Shizhe Zhou
Zhejiang University

Yueshan Xiong
National University of Defense Technology



TOG ARTICLE 109
Continuity Mapping for Multi-Chart Textures

Continuity maps can make any multi-chart parameterization seamless, without requiring re-parameterization of the artist-provided textures or inaccurate texturing operations like texture transfers.

Francisco Gonzalez Garcia
Gustavo Patow
Universitat de Girona

TOG ARTICLE 110
Motion Field Texture Synthesis

Application of example-based texture synthesis to motion fields. The technique takes on general exemplars, generates artistic effects, and produces 3D outputs from 2D inputs.

Chongyang Ma
Tsinghua University, Microsoft Research Asia

Li-Yi Wei
Microsoft Research

Baining Guo
Microsoft Research Asia, Tsinghua University

Kun Zhou
Zhejiang University

Technical Papers

Thursday, 17 December

Urban Modeling

2:15 PM–4:00 PM | Room 301/302

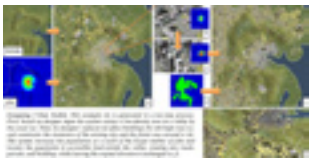
SESSION CHAIR
Voicu Popescu

TOG ARTICLE 111
Interactive Design of Urban Spaces Using Geometrical and Behavioral Modeling

Closing the loop between behavioral modeling and geometrical modeling of urban spaces. Generated urban models conform to plausible urban behavior and geometry, enabling fast creation of large models.

Carlos A.Vanegas
Bedrich Benes
Daniel G. Aliaga
Purdue University

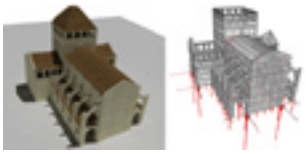
Paul Waddell
University of Washington



TOG ARTICLE 112
Procedural Modeling of Structurally Sound Masonry Buildings

Incorporating structural feasibility into procedural modeling of buildings. The method automatically tunes free parameters to satisfy statics and material constraints.

Emily Whiting
John Ochsendorf
Frédo Durand
Massachusetts Institute of Technology



TOG ARTICLE 113
Symmetric Architecture Modeling With a Single Image

A method to recover a realistic 3D architecture model from a single image by exploiting constraints derived from ubiquitous symmetries.

Nianjuan Jiang
Ping Tan
Loong Fah Cheong
National University of Singapore

TOG ARTICLE 114
Image-Based Street-Side City Modeling

A fully automatic approach to obtaining high-quality 3D building models from street-view images.

Jianxiong Xiao
Tian Fang
Peng Zhao
Hong Kong University of Science and Technology

Maxime Lhuillier
LASMEA-Université Blaise Pascal

Long Quan
Hong Kong University of Science and Technology

Technical Papers

Thursday, 17 December

Vectorization/Editing

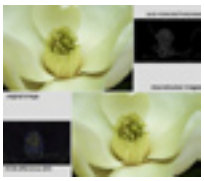
2:15 PM–4:00 PM | Room 303/304

SESSION CHAIR
Bing-Yu Chen

TOG ARTICLE 115
Patch-Based Image Vectorization with Automatic Curvilinear Feature Alignment

Introducing an effective vector-based representation and its associated vectorization algorithm for full-color raster images. The algorithm automatically performs curvilinear feature alignment to faithfully reconstruct input images.

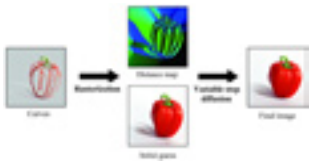
Tian Xia
Binbin Liao
Yizhou Yu
University of Illinois at Urbana-Champaign



TOG ARTICLE 116
A GPU Laplacian Solver for Diffusion Curves and Poisson Image Editing

A new minimal surface Poisson solver for diffusion curve rendering and seamless cloning.

Stefan Jeschke
David Cline
Peter Wonka
Arizona State University



TOG ARTICLE 117
Rendering Surface Details With Diffusion Curves

Diffusion curves rendered on objects just like textures with sharp details.

Stefan Jeschke
David Cline
Peter Wonka
Arizona State University

TOG ARTICLE 118
Efficient Affinity-Based Edit Propagation Using KD-Tree

An efficient approximation for edit propagation using KD-Tree, which reduces memory and time by hundreds of times while preserving visual fidelity even on large images and long videos.

Kun Xu
Yong Li
Tsinghua University

Tao Ju
Washington University in St. Louis

Shi-Min Hu
Tian-Qiang Liu
Tsinghua University

Technical Papers

Thursday, 17 December

Physically Based Animation

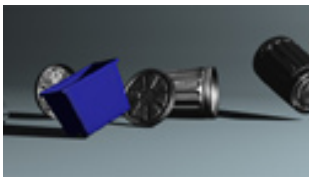
4:15 PM–6:30 PM | Room 301/302

SESSION CHAIR
John Keyser

TOG ARTICLE 119
Harmonic Shells: A Practical Nonlinear Sound Model for Near-Rigid Thin Shells

Synthesizing realistic sounds due to nonlinear thin-shell vibrations by introducing reduced-order modal dynamics and far-field acoustic transfer mapping techniques.

Jeffrey Chadwick
Steven An
Doug James
Cornell University



TOG ARTICLE 120
Stretching and Wiggling Liquids

This framework for simulating complex fluid phenomena introduces an Eulerian vortex-sheet method for controllable interface dynamics and a liquid-biased filter for sampling the surface without aliasing.

Doyub Kim
Seoul National University

Oh-Young Song
Sejong University

Hyeong-Seok Ko
Seoul National University

TOG ARTICLE 121
Synthetic Turbulence Using Artificial Boundary Layers

A novel method based on CFD turbulence modeling theory that allows us to efficiently precompute and simulate turbulence generation near obstacles in a fluid flow.

Tobias Pfaff
ETH Zürich

Nils Thürey
ETH Zürich

Andrew Selle
Walt Disney Animation Studios

Markus Gross
ETH Zürich, Disney Research Zürich

TOG ARTICLE 122
Aggregate Dynamics for Dense Crowd Simulation

A novel, scalable approach for simulating dense crowds by directly modeling the large-scale aggregate motion through a hybrid discrete/continuous model.

Rahul Narain
Abhinav Golas
University of North Carolina at Chapel Hill

Sean Curtis
Walt Disney Animation Studios

Ming Lin
University of North Carolina at Chapel Hill

TOG ARTICLE 123
Skipping Steps in Deformable Simulation With Online Model Reduction

A precomputation-free, online model-reduction method for accelerating nonlinear deformable body simulations.

Theodore Kim
University of Saskatchewan,
Cornell University

Doug James
Cornell University

Technical Papers

Thursday, 17 December

Paper Presentations in Japanese

4:15 PM–6:00 PM | Room 303/304

SESSION CHAIR
Tomoyuki Nishita

TOG ARTICLE 125

Seam CarvingとScalingを併用した最適化画像リサイズ方法

対象画像の内容を劣化させず、全体の構図も保存できる画像のサイズを変更する方法。画像距離、色の記述子及びSeam Energyを用いた新たなコスト関数を提案しパラメータの自動最適化を実現した

Weiming Dong
Chinese Academy of Sciences Institute of Automation

Ning Zhou
System Technologies Laboratories, Sony Corporation

Jean-Claude Paul
INRIA

Xiaopeng Zhang
Chinese Academy of Sciences Institute of Automation

TOG ARTICLE 129

反射のインタラクティブなデザイン手法

3次元モデル上の反射を簡単かつ迅速にデザインするための手法を提案します。物理的な制約にとらわれず、アート目的の効果を得ることが可能です。

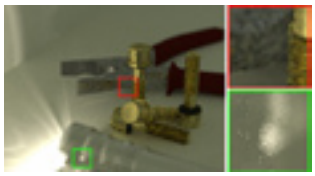
Tobias Ritschel
Makoto Okabe
Thorsten Thormählen
Hans-Peter Seidel
Max-Planck-Institut für Informatik

TOG ARTICLE 141

確率的プログレッシブフォトンマッピング

分散レイトレーシングによる効果と複雑な照明設定の組み合わせを可能にする新たなプログレッシブフォトンマッピングの定式化

Toshiya Hachisuka
Henrik Wann Jensen
University of California, San Diego



TOG ARTICLE 148

構造情報の入力による2次元画像からの3次元形状生成

既存の2次元画像の上にユーザが簡単な構造情報を入力することによって 3次元形状を作成する手法について紹介する

Yotam Gingold
New York University/JST ERATO

Takeo Igarashi
The University of Tokyo/JST ERATO

Denis Zorin
New York University

Technical Papers

Friday, 18 December

Resizing/Montage

9:00 AM–10:45 AM | Room 301/302

SESSION CHAIR
Seungyong Lee

TOG ARTICLE 124
Sketch2Photo: Internet Image Montage

A system that composes a realistic picture from a user-provided sketch with text labels by seamlessly stitching several photographs automatically searched from the internet.

Tao Chen
Ming-Ming Cheng
Tsinghua National Laboratory for Information Science and Technology

Ping Tan
National University of Singapore

Ariel Shamir
Efi Arazi School of Computer Science, The Interdisciplinary Center

Shi-Min Hu
Tsinghua National Laboratory for Information Science and Technology

TOG ARTICLE 125
Optimized Image Resizing Using Seam Carving and Scaling

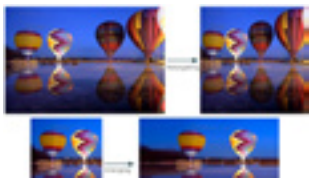
An optimized image-resizing algorithm that combines seam carviing and homogeneous scaling and merges their advantages.

Weiming Dong
Chinese Academy of Sciences Institute of Automation

Ning Zhou
System Technologies Laboratories, Sony Corporation

Jean-Claude Paul
INRIA

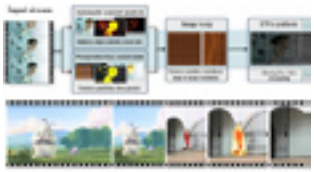
Xiaopeng Zhang
Chinese Academy of Sciences Institute of Automation



TOG ARTICLE 126
A System for Retargeting Streaming Video

A video-retargeting system that combines powerful automatic techniques with global control of the scene composition. Video is rescaled to arbitrary formats in real time and high quality.

Philipp Krähenbühl
Manuel Lang
Alexander Hornung
Markus Gross
ETH Zürich



TOG ARTICLE 127
Motion-Aware Temporal Coherence for Video Resizing

Construction of a complete content-aware video retargeting framework that robustly achieves temporal coherence even for long and challenging videos containing complex camera and/or object motion.

YuShuen Wang
National Cheng Kung University

Hongbo Fu
City University of Hong Kong

Olga Sorkine
New York University

TongYee Lee
National Cheng Kung University

Hans-Peter Seidel
Max-Planck-Institut für Informatik

Technical Papers

Friday, 18 December

Lighting & Materials

9:00 AM–10:45 AM | Room 303/304

SESSION CHAIR
Karol Myzskowski

TOG ARTICLE 128
Printing Spatially Varying Reflectance

Using inks and foils to print documents with a variety of material properties. This method solves the gamut-mapping and halftoning problems required to approximate svBRDFS with combinations of inks.

Wojciech Matusik
Adobe Systems Incorporated

Boris Ajdin
Max-Planck-Institut für Informatik,
Adobe Systems Incorporated

Jinwei Gu
Columbia University,
Adobe Systems Incorporated

Jason Lawrence
University of Virginia

Hendrik Lensch
Max-Planck-Institut für Informatik

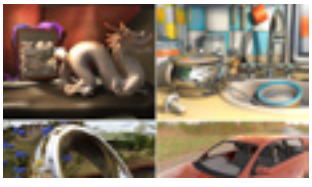
Fabio Pellacini
Dartmouth College,
Adobe Systems Incorporated

Szymon Rusinkiewicz
Princeton University,
Adobe Systems Incorporated

TOG ARTICLE 129
Interactive Reflection Editing

A system that transforms physically correct reflections into art-directed reflection, using intuitive editing operations that work directly on the reflecting surfaces in real time.

Tobias Ritschel
Makoto Okabe
Thorsten Thormählen
Hans-Peter Seidel
Max-Planck-Institut für Informatik



TOG ARTICLE 130
User-Assisted Intrinsic Images

An interactive approach separates reflectance and illumination in a photograph. At its core is a propagation model based on reflectance distribution assumptions. This enables manipulations including relighting and retexturing.

Adrien Bousseau
ARTIS - INRIA Grenoble University

Sylvain Paris
Adobe Systems Incorporated

Frédo Durand
MIT Computer Science and
Artificial Intelligence Laboratory

TOG ARTICLE 131
Webcam Clip Art: Appearance and Illuminant Transfer From Time-lapse Sequences

A data-driven approach for using a library of calibrated outdoor webcams as “webcam clip art” to inject varied, realistic appearance into the user’s own scenes.

Jean-Francois Lalonde
Alexei A. Efros
Srinivasa Narasimhan
Carnegie Mellon University

Technical Papers

Friday, 18 December

Real-Time Rendering

11:00 AM–12:45 PM | Room 301/302

SESSION CHAIR
David Kirk

TOG ARTICLE 132

Micro-Rendering for Scalable, Parallel Final Gathering

A novel micro-rendering technique for efficient final gathering in dynamic scenes with importance-warping for rasterization of hierarchical point representations. The paper demonstrates multiple-bounce indirect illumination and photon-mapping walkthroughs.

Tobias Ritschel
Max-Planck-Institut für Informatik

Thomas Engelhardt
VISUS/Universität Stuttgart

Thorsten Grosch
Hans-Peter Seidel
Max-Planck-Institut für Informatik

Jan Kautz
University College London

Carsten Dachsbacher
VISUS/Universität Stuttgart

TOG ARTICLE 133

All-Frequency Rendering With Dynamic, Spatially Varying Reflectance

A technique for real-time rendering of dynamic, spatially varying BRDFs with all-frequency shadows from environmental and point lights.

Jiaping Wang
Microsoft Reseach Asia

Peiran Ren
Tsinghua Univeristy

Minmin Gong
Microsoft Research Asia

John Snyder
Microsoft Research

Baining Guo
Microsoft Research

TOG ARTICLE 134

Depth-of-Field Rendering with Multiview Synthesis

A GPU-based real-time rendering method that simulates a high-quality depth-of-field blur, similar in quality to multiview accumulation methods.

Sungkil Lee
Max-Planck-Institut für Informatik

Elmar Eisemann
Universität des Saarlandes,
Max-Planck-Institut für Informatik

Hans-Peter Seidel
Max-Planck-Institut für Informatik

TOG ARTICLE 135

Amortized Supersampling

A real-time rendering scheme that reuses samples from earlier time frames to achieve spatial supersampling at a fraction of the cost when compared to traditional approaches.

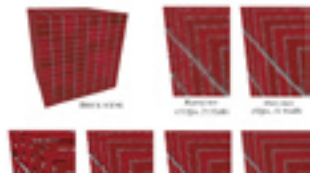
Lei Yang
Hong Kong University of Science and Technology

Diego Nehab
Microsoft Research

Pedro Sander
Hong Kong University of Science and Technology

Pitchaya Sitthi-Amorn
Jason Lawrence
University of Virginia

Hugues Hoppe
Microsoft Research



Technical Papers

Friday, 18 December

Shape Analysis

11:00 AM–12:45 PM | Room 303/304

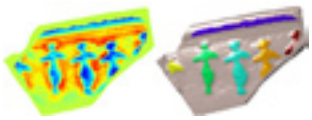
SESSION CHAIR
Olga Sorkine

TOG ARTICLE 136
Relief Analysis and Extraction

Extracting relief and details from surfaces by separating them into a base function and a height function. This approach estimates the height function without explicitly extracting the base surface.

Rony Zatzarinni
Ayellet Tal
Technion - Israel Institute of Technology

Arik Shamir
Interdisciplinary Center Herzliya



TOG ARTICLE 137
Abstraction of Man-Made Shapes

A novel algorithm for generating abstractions of 3D geometric models, specifically man-made objects, using a network of curves and associated normals, while suppressing details and irregularities.

Ravish Mehra
Qingnan Zhou
The University of British Columbia

Jeremy Long
University of Victoria

Alla Sheffer
The University of British Columbia

Amy Gooch
University of Victoria

Niloy J. Mitra
IIT Delhi/KAUST

TOG ARTICLE 138
Partial Intrinsic Reflectional Symmetry of 3D Shapes

Introducing algorithms for extraction and utilization of partial intrinsic reflectional symmetries of a 3D shape for shape analysis.

Kai Xu
Simon Fraser University,
National University of Defense Technology

Hao Zhang
Andrea Tagliasacchi
Simon Fraser University

Ligang Liu
Guo Li
Min Meng
Zhejiang University

Yueshan Xiong
National University of Defense Technology

TOG ARTICLE 139
Packing Circles and Spheres on Surfaces

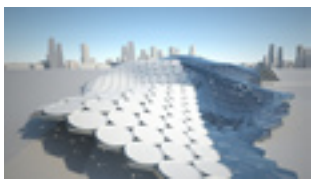
Triangle meshes whose faces form a packing are a rich source of geometric structures relevant to freeform architecture, like circle patterns, ornamental patterns of planar panels, and optimized subconstructions.

Alexander Schiftner
Evolute GmbH, Technische Universität Wien

Mathias Höbinger
Technische Universität Wien

Johannes Wallner
Technische Universität Graz

Helmut Pottmann
King Abdullah University of Science and Technology, Technische Universität Wien



Technical Papers

Friday, 18 December

Global Illumination

2:15 PM–4:00 PM | Room 301/302

SESSION CHAIR
George Drettakis

TOG ARTICLE 140
Adaptive Wavelet Rendering

This method adaptively renders directly in a wavelet basis to reduce Monte Carlo sample rate and uses a wavelet approximation to reconstruct a smooth image.

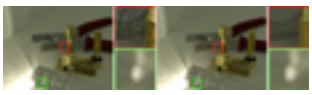
Ryan Overbeck
Craig Donner
Columbia University

Ravi Ramamoorthi
University of California, Berkeley

TOG ARTICLE 141
Stochastic Progressive Photon Mapping

A new formulation of progressive photon mapping that allows rendering of combinations of distributed ray-tracing efffects and complex illumination settings.

Toshiya Hachisuka
Henrik Wann Jensen
University of California, San Diego



TOG ARTICLE 142
Automatic Bounding of Programmal Shaders for Efficient Global Illumination

A method for enabling the use of programmable shaders in G.I. rendering demonstrated with multi-dimensional lightcuts and photon mapping on scenes with complex geometry, materials, and lighting.

Edgar Velazquez-Armendariz
Shuang Zhao
Milos Hasan
Bruce Walter
Kavita Bala
Cornell University

TOG ARTICLE 143
Virtual Spherical Lights for Many-Light Rendering of Glossy Scenes

Many-light approaches approximate the global-illumination problem by many virtual point lights (VPLs). This paper introduces the virtual spherical light (VSL), which achieves much better accuracy in glossy scenes.

Milos Hasan
Jaroslav Krivanek
Bruce Walter
Kavita Bala
Cornell University

Technical Papers

Friday, 18 December

Imaging Enhancement

4:15 PM–6:00 PM | Room 301/302

SESSION CHAIR
Diego Gutierrez

TOG ARTICLE 144
Removing Image Artifacts Due to Dirty Camera Lenses and Thin Occluders

Physics-based methods to remove artifacts caused by dirty camera lenses (for example, dirt, dust, fingerprints) and thin occluders (for example, fences, window shutter) from photographs and videos.

Jinwei Gu
Columbia University

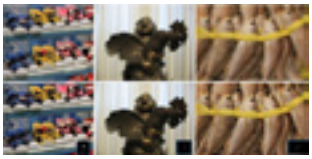
Ravi Ramamoorthi
University of California, Berkeley

Peter Belhumeur
Shree Nayar
Columbia University

TOG ARTICLE 145
Fast Motion Deblurring

A fast deblurring method that produces a deblurring result from a single image of moderate size within a few seconds.

Sunghyun Cho
Seungyong Lee
Pohang University of Science and Technology

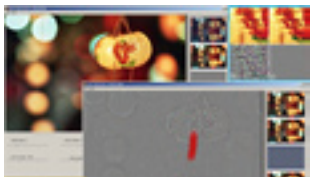


TOG ARTICLE 146
Noise Brush: Interactive High-Quality Image-Noise Separation

A new joint image-noise filte, and a novel user interface to achieve high-quality image-noise separation or image denoising in an interactive fashion.

Jia Chen
Chi-Keung Tang
The Hong Kong University of Science and Technology

Jue Wang
Adobe Systems Incorporated



TOG ARTICLE 147
Edge-Preserving Multiscale Image Decomposition Based on Local Extrema

An edge-preserving multiscale decomposition of images using a new model for detail that inherently captures oscillations, a key property that distinguishes textures from individual edges.

Kartic Subr
Cyril Soler
INRIA

Frédo Durand
MIT Computer Science and Artificial Intelligence Laboratory

Technical Papers

Friday, 18 December

Geometry: Interaction & Subdivision

4:15 PM–6:00 PM | Room 303/304

SESSION CHAIR
Niloy Mitra

TOG ARTICLE 148
Structured Annotations for 2D-to-3D Modeling

A single-view 2D interface for 3D modeling based on the idea of placing 2D primitives and annotations on an existing, pre-made sketch or image.

Yotam Gingold
New York University/JST ERATO

Takeo Igarashi
The University of Tokyo/JST ERATO

Denis Zorin
New York University

TOG ARTICLE 149
Analytic Drawing of 3D Scaffolds

Novel techniques for computer-assisted analytic drawing of 3D scaffolds. Geometric constraints derived from the scaffold allow precise 3D geometry to be inferred from sketched stroke input.

Ryan Schmidt
University of Toronto

Azam Khan
Autodesk Inc.

Karan Singh
University of Toronto

Gord Kurtenbach
Autodesk Inc.

TOG ARTICLE 150
DiagSplit: Parallel, Crack-Free, Adaptive Tessellation for Micropolygon Rendering

A highly parallel algorithm for adaptively tessellating displaced parametric surfaces into high-quality, crack-free micropolygon meshes.

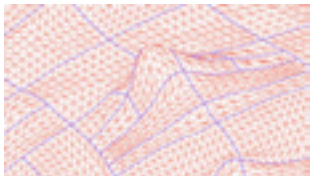
Matthew Fisher
Stanford University

Kurt Akeley
Microsoft Research

Patrick Hanrahan
Stanford University

William Mark
Intel Corporation

Solomon Boulos
Kayvon Fatahalian
Stanford University



TOG ARTICLE 151
Approximating Subdivision Surfaces With Gregory Patches for Hardware Tessellation

A new method of approximating Catmull-Clark subdivision surfaces with Gregory patches is. These patches are easily accelerated by the new Direct3D 11 hardware tessellator, resulting in excellent performance.

Charles Loop
Microsoft Research

Scott Schaefer
Texas A&M University

Tianyun Ni
Ignacio Castano
NVIDIA Corporation

Technical Papers

Saturday, 19 December

GPU Algorithms & Systems

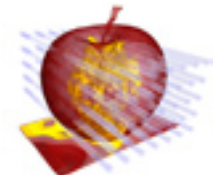
9:00 AM–10:45 AM | Room 301/302

SESSION CHAIR
Sung-Eui Yoon

TOG ARTICLE 152
Efficient Ray Casting of Volumetric Datasets With Polyhedral Boundaries on Manycore GPUs

Achievement of real-time frame rates while ray-casting many volumes with arbitrary intersecting polyhedral geometry. CUDA allows us to fully parallelize this process with optimal communication between parallel threads.

Bernhard Kainz
Markus Grabner
Alexander Bornik
Stefan Hauswiesner
Judith Mühl
Dieter Schmalstieg
Technische Universität Graz



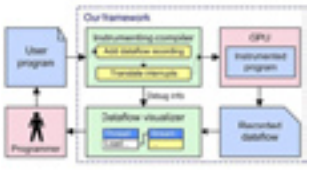
TOG ARTICLE 153
Debugging GPU Stream Programs Through Automatic Dataflow Recording and Visualization

A novel framework for debugging GPU stream programs through automatic dataflow recording and visualization.

Qiming Hou
Tsinghua University

Kun Zhou
Zhejiang University

Baining Guo
Microsoft Research Asia



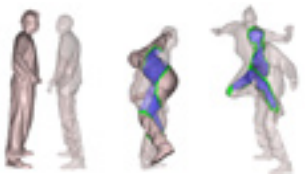
TOG ARTICLE 154
Real-Time Parallel Hashing on the GPU

An efficient, real-time, data-parallel algorithm for building large hash tables of millions of elements in real time and its use for various graphics algorithms.

Dan Anthony Alcantara
Andrei Sharf
Fatemeh Abbasinejad
Shubhabrata Sengupta
University of California, Davis

Michael Mitzenmacher
Harvard University

John Owens
Nina Amenta
University of California, Davis



TOG ARTICLE 155
RenderAnts: Interactive REYES Rendering on GPUs

A REYES rendering system that runs entirely on GPUs. RenderAnts can generate images of comparable quality to RenderMan, but is more than one order of magnitude faster.

Kun Zhou
Zhejiang University

Qiming Hou
Tsinghua University

Zhong Ren
Minmin Gong
Xin Sun
Baining Guo
Microsoft Research Asia

Technical Papers

Saturday, 19 December

3D is Fun

11:00 AM–12:45 PM | Room 301/302

SESSION CHAIR
Eugene Zhang

TOG ARTICLE 156
Shadow Art

Computational tools for creation of shadow art allowing the user to directly specify the desired shadows using a set of binary images and corresponding projection information.

Niloy J. Mitra
IIT Delhi/KAUST

Mark Pauly
ETH Zürich

TOG ARTICLE 157
3D Polyomino Puzzle

A computer-aided geometric design approach to realize a new genre of 3D puzzle, namely the 3D Polyomino puzzle

Kui Yip Lo
Hong Kong University of Science and Technology

Chi-Wing Fu
Nanyang Technological University

Hongwei Li
Hong Kong University of Science and Technology

TOG ARTICLE 158
The Graph Camera

A flexible framework for designing and rendering seamless multiperspective images of virtual and real-world 3D scenes.

Voicu Popescu
Paul Rosen
Nicoletta Adamo-Villani
Purdue University

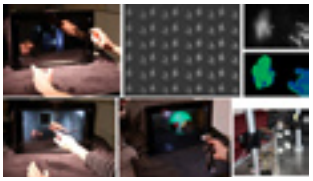
TOG ARTICLE 159
BiDi Screen: A Thin, Depth-Sensing LCD for 3D Interaction Using Lights Fields

The BiDi screen supports 3D gestures on a flat LCD screen by making embedded optical sensors angularly sensitive. It supports on-screen multi-touch and off-screen hover-based gestures.

Matthew Hirsch
MIT Media Lab

Douglas Lanman
Brown University

Henry Holtzman
Ramesh Raskar
MIT Media Lab



Technical Papers

Saturday, 19 December

Perception

11:00 AM–12:45 PM | Room 303/304

SESSION CHAIR
Tien-Tsin Wong

TOG ARTICLE 160
Evaluation of Reverse Tone Mapping Through Varying Exposure Conditions

The results of a psychophysical study evaluating the performance of reverse tone-mapping approaches on poorly exposed images.

Belen Masia
Sandra Agustin
Universidad de Zaragoza

Roland Fleming
Max-Planck-Institut für biologische Kybernetik

Olga Sorkine
New York University

Diego Gutierrez
Universidad de Zaragoza

TOG ARTICLE 161
Robust Color-to-Gray via Nonlinear Global Mapping

A fast and robust color-to-grayscale image and video conversion based on nonlinear global mapping. The conversion satisfies mapping consistency, lightness fidelity, feature preservation, and ordering consistency.

Yongjin Kim
Cheolhun Jang
Julien Demouth
Seungyong Lee
Pohang University of Science and Technology

TOG ARTICLE 162
Structure-Aware Error Diffusion

An original error-diffusion method that produces visually pleasant images while preserving fine details and visually identifiable structures present in the original images.

Jianghao Chang
Benoit Alain
Victor Ostromoukhov
Université de Montréal

TOG ARTICLE 163
Emergence Images

Emergence images, a seemingly meaningless collection of random pieces, are perceived as meaningful when observed as a whole. This paper presents a synthesis algorithm for generating an infinite number of emergence images.

Niloy J. Mitra
IIT Delhi/KAUST

Hung-Kuo Chu
Tong-Yee Lee
National Cheng Kung University

Lior Wolf
Hezy Yeshurun
Daniel Cohen-Or
Tel Aviv University

Technical Papers

Saturday, 19 December

Hair & Collaborative Modeling

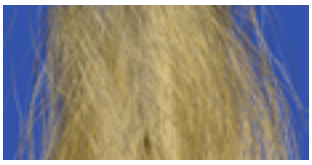
2:15 PM–4:00 PM | Room 301/302

SESSION CHAIR
Tobias Ritschel

TOG ARTICLE 164
Capturing Hair Assemblies Fiber By Fiber

Unlike other work on image-based capture of hair geometry, this method captures the 3D locations of the individual fibers, producing highly realistic small-scale structure.

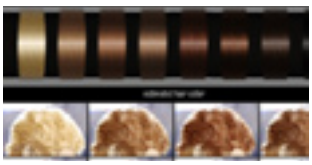
Wenzel Jakob
Jonathan T. Moon
Steve Marschner
Cornell University



TOG ARTICLE 165
A Practical Approach for Photometric Acquisition of Hair Color

A practical approach for photometric acquisition of hair color.

Arno Zinke
Tomas Lay Herrera
Andreas Weber
Martin Rump
Reinhard Klein
Universität Bonn



TOG ARTICLE 166
Hair Meshes

A new method for modeling hair that aims to bring hair modeling as close as possible to modeling polygonal surfaces.

Cem Yuksel
Scott Schaefer
John Keyser
Texas A&M University

TOG ARTICLE 167
Exploratory Modeling With Collaborative Design Spaces

Combining modeling and collaboration technologies to create exploratory modeling tools based on parametric design spaces.

Jerry Talton
Daniel Gibson
Lingfeng Yang
Pat Hanrahan
Vladlen Koltun
Stanford University

Technical Papers

Saturday, 19 December

Character Animation

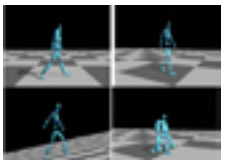
4:15 PM–6:30 PM | Room 301/302

SESSION CHAIR
Theodore Kim

TOG ARTICLE 168
Optimizing Walking Controllers

An algorithm for optimizing control parameters for full-body 3D characters that reproduces many elements of natural human walking.

Jack M. Wang
David J. Fleet
Aaron Hertzmann
University of Toronto



TOG ARTICLE 169
Compact Character Controllers

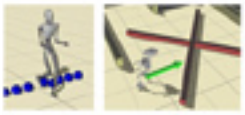
Intelligent automatic selection of parametric motion data enables compact and powerful data-driven character controllers that can achieve challenging objectives such as navigating dynamically changing stairs or revolving doors.

Yongjoon Lee
Seong Jae Lee
Zoran Popovic
University of Washington

TOG ARTICLE 170
Robust Task-Based Control Policies for Physics-Based Characters

Robust task-based control policies allow physically simulated characters to complete given tasks, such as walking to a target location, while being physically perturbed in significant ways.

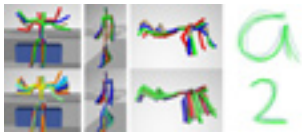
Stelian Coros
Philippe Beaudoin
Michiel van de Panne
The University of British Columbia



TOG ARTICLE 171
Modeling Spatial and Temporal Variation in Motion Data

Given a few input examples, this system trains a generative model that can synthesize spatial and temporal variants of the inputs.

Manfred Lau
Ziv Bar-Joseph
James Kuffner
Carnegie Mellon University



TOG ARTICLE 172
Real-Time Prosody-Driven Synthesis of Body Language

A data-driven method for synthesizing human body-language animations from a live speech signal in real time.

Sergey Levine
Christian Theobalt
Vladlen Koltun
Stanford University

Technical Papers

Saturday, 19 December

Reconstruction & Modeling

4:15 PM–6:00 PM | Room 303/304

SESSION CHAIR
Hugues Hoppe

TOG ARTICLE 173
Out-of-Core Multigrid Solver for Streaming Meshes

An out-of-core approach to detail-preserving mesh deformation. This novel streaming multigrid solves the Poisson equation defined over out-of-core streaming meshes with irregular connectivity.

Xiaohan Shi
Hujun Bao
Kun Zhou
Zhejiang University

TOG ARTICLE 174
Dynamic Shape Reconstruction Using Multi-View Photometric Stereo

In this method for high-resolution capture of moving (60 fps) 3D geometry using active shape-from-shading with hemispherical illumination, normal maps are integrated and matched to enforce consistency between the resulting surfaces.

Daniel Vlasic
Massachusetts Institute of Technology

Pieter Peers
University of Southern California

Ilya Baran
Massachusetts Institute of Technology

Paul Debevec
University of Southern California, Institute for Creative Technologies

Jovan Popović
Massachusetts Institute of Technology, Adobe Systems Incorporated, University of Washington

Szymon Rusinkiewicz
Princeton University

Wojciech Matusik
Adobe Systems Incorporated

TOG ARTICLE 175
Robust Single-View Geometry and Motion Reconstruction

This novel geometry and motion-reconstruction framework uses a two-scale approach based on template tracking and detail synthesis to recreate complex deforming surfaces from a single-view scan sequence.

Hao Li
ETH Zürich

Bart Adams
Stanford University,
Katholieke Universiteit Leuven

Leonidas J. Guibas
Stanford University

Mark Pauly
ETH Zürich

TOG ARTICLE 176
Consolidation of Unorganized Point Clouds for Surface Reconstruction

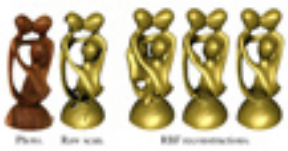
An algorithm that consolidates an unorganized point cloud with noise, outliers, non-uniformities, and in particular interference between adjacent surface sheets as a preprocess to surface generation.

Hui Huang
Dan Li
The University of British Columbia

Hao Zhang
Simon Fraser University

Uri Ascher
The University of British Columbia

Daniel Cohen-Or
Tel-Aviv University



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Tony DeRose
SIGGRAPH 2010 Technical Papers Chair
Pixar Animation Studios

Xin Tong
Microsoft Research Asia

Yung-Yu Chuang
National Taiwan University

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Special Sessions

Thursday, 17 December

Encountering the Cutting Edge of Japanese Video Game Development

2:15 PM–4:00 PM | Level 1–Main Hall

Trends and Commitments to Technical Development in the Video Game Industry in Japan

The international videogame market is growing, yet the same market in Japan has virtually stalled. In the past, Japanese titles were top sellers in the West, but now Western companies dominate the market. Unlike their Japanese counterparts, popular Western games are characterized by their technical excellence (for example, their realistic graphics and human-like behavior).

For Japanese video game manufacturers, generating higher profits in the Western market is the number-one priority, and all companies are making efforts to achieve that goal. CESA, Japan's only organization of video game companies, presents CEDEC, a game developers' conference devoted to improving their development capabilities. CEDEC has grown significantly in size. The 2009 conference attracted an audience of 3,500. Our efforts to internationalize the conference and improve sessions will continue as we seek to contribute to the industry on a global scale.

Kenji Matsubara
Tecmo Koei Holdings Co., Ltd

Can Video Games be the Frontier of CG Research?

"Research presented at SIGGRAPH is intended for high-end movies." Not long ago, this perception was prevalent in the videogame industry. But with each generation, videogame console performance improves, the consoles become more complex, and game content is enhanced to meet market expectations. These tendencies are leading to longer production times. The industry needs the advanced technologies represented by SIGGRAPH, which raises an important question: Is the game industry attractive to researchers?

Considering this question as a mission, a little less than a year ago Square Enix established the Square Enix Research Center (SERC) to facilitate advanced studies in game technology. The center employs select researchers from around the world, predicts technologies that are expected to be at the core of next-generation games, and presents its research at academic conferences. In this session, SERC presents an overview of its perspective on the game industry.

Naoto Yoshioka
Square Enix Co., Ltd

In Pursuit of New Visual Expressions

The game industry has always pursued new and stimulating visual expressions. This session presents examples of game products to explain how the Japanese game industry heightens visual values and conveys a unique visual expression. It concludes with a summary of the Japanese game industry's involvement with SIGGRAPH and its forums for advanced visuals and techniques.

Naohiro Saito
NAMCO BANDAI Games Inc

Kazunobu Uehara
Computer Entertainment Supplier's Association (CESA)

Takashi Imagire
NAMCO BANDAI Games Inc.

Hiroshi Matsuyama
CyberConnect2 Co., Ltd.

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Special Sessions

Thursday, 17 December

日本のビデオゲーム開発の現場では今何が起きているか?

14:15–16:00 | Level 1–Main Hall

日本のビデオゲーム業界の動向と技術開発への取組み

グローバルなビデオゲーム市場は成長を続ける一方、日本のビデオゲーム市場はほとんど伸びていない。

日本製タイトルはかつて欧米での売上の上位を占めていたが、今日では欧米企業が目立っている。欧米で人気のゲームは日本と異なり、リアル性の高いグラフィックス、人間らしい振る舞いをするAIなど、技術的要素が高いという特徴がある。

日本のビデオゲーム企業は、欧米市場での収益拡大が最重要課題となっており、各社それぞれ努力を続けている。

CESAは日本の唯一のビデオゲーム業界団体であり、開発力の向上を目指しゲーム開発者カンファレンスであるCEDECを運営している。

2009年のCEDECは参加者3,500名と大きな規模に発展した。

これからもカンファレンスの国際化、セッションの充実を進め、グローバルな貢献を目指している。

松原健二
コーエーテクモホールディングス代表取締役
社長/CESA副会長、技術委員会委員長

ビデオゲームは、CG研究のフロンティアたり得るか ?

つい最近まで、「SIGGRAPHで発表される研究は、ハイエンドムービー用のものである」という認識が、ビデオゲーム業界では一般的でした。

しかし、世代を追うごとに高性能化、複雑化するゲームコンソール、お客様のご期待にお応えするためにますます高品質化するコンテンツは、長期化する制作期間をもたらしました。これの解決のための施策の一つとして、私は、SIGGRAPHに象徴されるような先端技術研究の取り込みを積極化していく必要があると考えています。

これが、ゲーム業界側の要請であるとすれば、もう一つの課題があります。それは、ゲーム業界は、研究者の方にとって魅力的なのか? という課題です。

これを命題のひとつとして据えて、当社では、先端研究活動を目的とし、

Square Enix Research Center (SERC)を立ち上げて一年弱になります。

SERC では、国内外から少数精鋭の研究者を擁し、次々世代のゲームの要素となるであろう技術を予測、先行研究の結果を学会で積極発表する事業を行っています。

この活動についてご紹介し、ゲーム業界における「ある視点」を共有させて頂ければと考えています。

吉岡 直人
スクウェア・エニックス 研究開発部
チーフ・テクノロジスト

新しい映像表現を求めて

ゲーム業界は、常に新しく刺激的な映像表現を求めてきました。

本セッションでは、日本のゲーム業界がどのようにしてゲームの映像の価値を高めてきたか、また、どのように日本独特の映像表現を実現しているかということに関して、ゲームの製品における具体例を使って説明いたします。

その上で、最先端の映像や技法が発表される場であるSIGGRAPHに対して日本のゲーム業界がどのように向き合ってきたかということについて、述べさせていただきます。

斎藤直宏
バンダイナムコゲームスコンテンツ制作本部
制作ディビジョン技術部サウンド部
ゼネラルマネー

植原一充
社団法人 コンピュータエンターテインメント協会
技術委員会/CEDECアドバイザリーボード

今給黎隆博士(科学)
株式会社バンダイナムコゲームス
コンテンツ制作本部制作ディビジョン技術部
プロジェクトサポート課
ソフトウェアテクノロジスト

松山 洋
株式会社サイバーコネクトツー
President/CEO

Special Sessions

Friday, 18 December

Beyond Just Gaming: Playfulness as a Design Driver for Mobile Applications

9:00–10:45 | Level 1–Main Hall

Games are fun! People play and are drawn to games, because they are intrinsically motivating. The activity of playing is rewarding in itself. This Special Session focuses on how game structure influences design of other kinds of applications and services. Including playful features that elicit feelings such as fellowship, nurture, and challenge, increases users' motivation to try out new features and enhances overall product satisfaction. These features should be based on knowledge of the psychological foundations of playful behavior, which explain, at least in part, why certain things are more fun to do than others.

Juss Holopainen
Nokia Research Center

Global Production: How the Digital Media Industry Has Expanded Its Borders to Stay Competitive

11:00–12:45 | Level 1–Main Hall

Digital content production is an intensively competitive industry. Companies are constantly trying to ncrease quality and productivity while reducing overhead costs. Many companies find they need to outsource for cheaper and faster results.

Four years after opening its first and only studio outside northern California, Lucasfilm is now incorporating contributions from its Singapore studio in all of its productions: visual effects for ILM, the "Clone Wars" television series, portable games for LucasArts and most recently feature animation. Xavier Nicolas, General Manager of Luscafilm Singapore, explains how in-sourcing production to Singapore has allowed Lucasfilm to extend its capacity and flexibility, by leveraging and training regional talent, sharing pipelines and processes across projects, and establishing a strong platform for further creative and technology development.

Based in Tokyo, Polygon Pictures taps into a vast pool of talent and creativity, but it is operating in one of the world's most expensive cities. To remain competitive, Polygon applies production-efficiency improvement measures and outsources part of its production to studios in China and India. Shuzo Shiota, Polygon's president and CEO, discusses venturing into international markets by fusing Japanese sensibilities and aesthetics with universal storytelling, supported by internationally accepted production practices. He also evaluates the benefits of creating a Polygon studio in less expensive regions, outside Japan.

DJL Worldwide's core business is to match international game businesses with partners in China. Based in Shanghai, DJL helps clients find the right publishing partners and developers. DJL also provides in-depth industry analysis for investors and high-end management consulting for game studios. DJL CEO Billy Hsu explores how international companies can benefit from global collaboration that provides more than just cost reduction and production efficiencies. By establishing a presence in China, companies can learn from Asian online game producers, which have outpaced ther Western competitors in several areas such as business models, player management, and game design.

Xavier Nicolas
Lucasfilm Singapore

Shuzo Shiota
Polygon Pictures, Inc.

Billy Hsu
DJL Worldwide

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Special Sessions

Friday, 18 December

Ring of Gundam: No Hints for Creation in Your Manuals

16:15–18:00 | Level 1–Main Hall

This year, for the 30th anniversary of the iconic 2D animation "Mobile Suit Gundam", Yoshiyuki Tomino produced a commemorative film: "Ring of Gundam". The experimental production involved 2D and 3D animation techniques, 2D and 3D visuals, and applied live-action technology. During the production process, the creative team encountered many conflicts between creation and technology, which are explained and clarified in this talk.

Yoshiyuki Tomino
Ikuo Nishii
ROBOT Communications Inc.

リング オブ ガンダム: マニュアルに創作のヒントはない

16:15–18:00 | Level 1–Main Hall

日本の代表的なセルアニメーション『機動戦士ガンダム』は、今年30周年を迎えて、その記念映像作品として『Ring of Gundam』が制作された。

本作は、富野総監督の指揮の下、セルアニメーション、CGスタッフの技術、それらを統合するデザインワーク、ライブ映画の制作までを視野にいれた実験的ショートムービーとなった。監督の「創造の未来」への独自の視点があり、その要求をどのように達成すべきか、という現場的な課題が明確になったワーキングになった。デジタル時代のクリエーターが直面する創造と技術の葛藤が浮き彫りにされたのだ。

富野由悠季
西井育生
ROBOT Communications Inc.

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Special Sessions

Saturday, 19 December

Making your Mark on the Digital Movie Business: The Road to Success

9:00–10:45 | Level 1–Main Hall

Scott Ross has been trailblazing the digital media landscape for more than 30 years, leading companies to more than 15 Academy Award nominations and seven Oscars. From his start at Lucasfilm's Industrial Light & Magic to his successful creation and leadership of Digital Domain, one of the largest and most respected digital production studios in the motion picture industry, Ross has been a pioneer and groundbreaking visionary. Recently appointed as executive advisor at SCAD, he is currently launching several new programs designed to provide industry-leading digital media education. In this Special Session, he discusses what it takes to build and run a successful animation and movie studio, and the skills and mindset required for success in the global market.

Scott Ross
Executive Advisor
Savannah College of Art and Design

"Astro Boy": Updating a 2D Icon to Modern CG

11:00–11:45 | Level 1–Main Hall

Some things that can be easily represented in graphic form cannot be easily represented in 3D. This session on the creative steps required to bring Astro Boy into a 3D world reviews the filmmakers' decision-making process as they translated a simple 2D icon into 3D and the animation tests they used to develop the "Astro Boy" characters.

Tim Cheung
IMAGI Studios

「アトム」2次元で表現された人気キャラクターから最新CGへ進化

11:00–11:45 | Level 1–Main Hall

2次元的なイラストやマンガの表現を3次元CGで表現することは難しいことがあります。このセッションでは、映画「アトム」を3次元CGの世界で表現するためのクリエイティブな制作プロセスについて解説します。2次元的表現の鉄腕アトムのキャラクターを3次元化するために、アニメーションテストなど様々な試行錯誤を振り返ります。このプロセスから、いかにクリエイティブな制作における意思決定をしたかを紹介します。

Tim Cheung
IMAGI Studios

The Production of "Astro Boy": Asset Creation and Cloud FX

12:00–12:45 | Level 1–Main Hall

This two-part session summarizes the production workflow at Imagi Studios. The first part, on asset creation for "Astro Boy", uses examples to illustrate the design process from concept development to completion of production-ready 3D assets. Topics include the surfacing requirements for the hero and the robotic Peacekeeper, design of the futuristic Metro City set, creation of the Scrapheap, and design of the various vehicle designs present in Metro City. The second part details the design and technology used to create the cloud sequence in "Astro Boy", including the issues, testing, and tools used to produce the film's longest cloud shot, from storyboard to final result.

Wai kit Wan
Don Wong
IMAGI Studios

「アトム」のプロダクション：アセット開発と雲シーンのエフェクトについて

12:00–12:45 | Level 1–Main Hall

この2部に分かれたセッションでは、Imagi Studiosにおける制作フローの概要について述べます。第1部では、映画「アトム」のアセット開発手法について紹介し、コンセプト開発から3Dデータとしてのアセットが完成するまでの設計プロセスを解説します。また、ヒーローとピースキーパーロボットの曲面の表現、Metro Cityのデザイン、Metro Cityに登場する様々な乗物のデザイン等についても紹介します。第2部では、「アトム」における長尺の雲のシーンについて、デザインと技術開発の両面から開設をします。特に、ストーリーボードから完成まで、その技術的課題、試行錯誤、開発したツールなどについて紹介します。

Wai kit Wan
Don Wong
IMAGI Studios

Full Conference and Full Conference One-Day attendees with a valid registration for the day of the session are admitted first to each Special Session.

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※フルカンファレンスパス、及びにフルカンファレンス1日券をお持ちの来場者の方を優先させて頂きます。

Special Sessions

Saturday, 19 December

Teaching Animation at GOBELINS: A Tapestry of Talent and Skills

16:15–18:00 | Level 5–Auditorium

Eric Riewer explains GOBELINS' special approach to teaching animation and shows the 10 student films made in 2009. The digital revolution has transformed the animation program at GOBELINS since its creation more than 30 years ago, but the foundations of drawing skills remain firmly in place. GOBELINS believes that digital tools can not replace creative thinking. Artists must receive traditional training and then master a wide array of skills in computer graphics in order to give life to their animations. Eric Riewer became the head of the animation department at GOBELINS, l'école de l'image, based in Paris, in 1998. Since 2006, he has been the manager of international relations for the whole GOBELINS school. He also manages an international summer school course in character animation every year in Paris
and organizes master classes in Asia.

Eric Riewer
GOBELINS, l'école de l'image

Exhibitor Tech Talks & Sessions

Thursday, 17 December

Going Procedural with Houdini

Side Effects Software Inc.

Thursday, 17 December
10:00 AM - 12:00 PM
Hall B, Tech Talk Room 1

Every day, animators and visual effects artists are being asked to create more shots and achieve more realistic results with tighter deadlines and shrinking resources.

In this talk, senior Houdini artist John Courte demonstrates how Houdini's node-based procedural workflow provides the best tools for organizing and managing your animations and visual effects. Then he shows how these same procedural networks keep you focused on the creative process as your project grows and multiple iterations become essential. Learn how Houdini provides unprecedented levels of flexibility and control to make you more productive in your day-to-day work.

What's New With Pixar's Core Rendering Technology: RenderMan

Pixar Animation Studios

Thursday, 17 December
12:30 PM - 1:45 PM
Hall B, Tech Talk Room 1

The first part of this talk and demonstration focuses on the technology used to render the imagery for "Up". Several case studies from the film show how Pixar develops shaders, from initial photo reference and concept art to the final lit shot. The second half of the talk is a demonstration of RenderMan Studio, showing how RenderMan can be incorporated into your Maya workflow in a straightforward manner, and a review of some of the features in the latest release of RenderMan Pro Server 15.0.

When Physics Simulation Turns Into Art

Phyzios, Inc.

Thursday, 17 December
12:30 PM - 1:45 PM
Hall B, Tech Talk Room 2

(Presented in English and Japanese/
英語・日本語両方での発表)

This talk introduces the particle method, a unique physics simulation technology that handles everything as a collection of particles. It includes examples of computer graphics and games created with the particle method and a demonstration of PHYZIOS Studio, a web application based on the slogan: "What you draw starts moving and turns into games."

物理シミュレーションがアートになる時代

Phyzios, Inc.

Thursday, 17 December
12:30 PM - 1:45 PM
Hall B, Tech Talk Room 2

(Presented in English and Japanese/英語・日本語両方での発表)

あらゆるものを粒子の塊として扱うユニークな
物理シミュレーションの技法「粒子法」の紹介と、粒子法を応用した「描いた絵が動いてゲームになる」ユーザ投稿型WEBサイト「PHYZIOS Studio」を紹介します。粒子法がCGアートやゲームにおいて、実に多彩な表現を実現している様子をご紹介します。

プリビジュアライゼーション(プリビズ)の過去、現在、未来

IMAGICA + The Third Floor

Thursday, 17 December
2:30 PM - 3:45 PM
Hall B, Tech Talk Room 1

プリビズは、プリプロからポスプロまでの全ワークフローにおいて、クリエイティブの探求から技術的な問題の解決までサポートできる技術です。リアルタイムプリビズを考案したIMAGICAのプリビズ・チームと「アバター」「クリスマス・キャロル」「バイオハザード5」を手がけたThe Third Floor CEO、Chris Edwards氏が、映像制作におけるプリビズの重要性を、実例を用いて解説します。

The Past, Present, and Future of Previsualization

IMAGICA + The Third Floor

Thursday, 17 December
2:30 PM - 3:45 PM
Hall B, Tech Talk Room 1

(Presented in English and Japanese/英語・日本語両方での発表)

Previs is a technique that supports creators' visions and solves technical problems within the entire workflow, from conceptual designing to final post production for any production work.

IMAGICA's real-time previs team and Chris Edwards, CEO/founder of The Third Floor, Inc., who has created previs for "Avatar", "Christmas Carol," and "Residence Evil 5", will talk about the importance of previs for production work by showing actual sample footage.

Exhibitor Tech Talks & Sessions

Thursday, 17 December

Rasterization on Larrabee: A First Look at Larrebee New Instructions (LRBni) in Action

Intel Japan K.K. / インテル株式会社

Thursday, 17 December | 16:15–18:00
Hall B, Tech Talk Room 1

(Presented in Japanese 日本語での発表)

Larrabee is Intel's revolutionary approach to extending the evolving programmability of the GPGPU to its logical end. The Larrabee architecture features many cores and threads, as well as a new vector instruction-set extension (the Larrabee new instructions - LRBni). This overview of LRBni discusses the major instruction features: 16-wide SIMD, multiply-add, ternary instructions, predication, built-in data-format conversion, and gather/scatter. Then it takes a close look at a specific and not obviously vectorizable application of LRBni: rasterization. This crucial stage in the Larrabee rendering pipeline demonstrates how developers can use the flexibility of the new instruction set to solve problems that are not obviously shader-like.

Learning Objective
Understanding the function of this architecture and instruction set gives attendees information on how to design the next iteration of their game engines and the possibilities available when programming Larrabee natively.

Intended Audience and Prerequisites
This talk is designed for programmers, although it will be interesting to anyone interested in Larrabee and why processor architecture is evolving in Larrabee's direction.

現行GPGPUのプログラマブル化を飛躍的に進化させるインテルのLarrabee。今回は、Larrabeeのメニーコア／マルチスレッドの実現方法、また新しいベクター命令セットであるLRBniについて説明します。

更に踏み込んで、一般的にはベクター化しにくいアプリケーションの一つであるラスタライゼーション。パイプラインの中では重要なステージであり、シェーダー・プログラムなどとは違った課題に対して柔軟なCPUアークテクチャーをどのように応用できるかと言う実例を見て行きます。

聴講者が得られるであろう知見:
このセッションでは、Larrabeeの新命令セットを紹介し、その主要な機能である16ワイドSIMD、乗加算、3オペランド命令、予測、データー変換、|スキャッター／ギャザーについても説明します。また、ベクター化された具体例として、Larrabeeのレンダリング・パイプラインの要のひとつであるラスタライザーを説明します。このセッションを通して、開発者が新しい命令セット(LRBni)の柔軟性を利用して課題をクリアするアイデアを提供するとともに、次期ゲーム開発においてこの新命令セットをさらに有効活用するための情報を開示します。

聴講者に期待するスキル:
Larrabeeについて興味がある方であれば、どなたにでも広く聴いていただける内容です。プログラミングに関する基本的な知識があるとなお面白いでしょう。

インテル株式会社 インテル技術本部
アプリケーション スペシャリスト
太田仁彦

Integrating CUDA Into a Visual-Effects Pipeline

NVIDIA GK

Thursday, 17 December | 4:30 PM - 6:00 PM
Hall B, Tech Talk Room 2

(Presented in English and Japanese 英語・日本語両方での発表)

This overview of NVIDIA's CUDA architecture focuses primarily on how it can be effectively integrated into a visual-effects pipeline. Topics include: proven techniques and algorithms for working with massively parallel architectures, and some useful libraries and tools from the perspective of visual-effiects R&D. Don't get left behind. Join the GPU computing revolution! Wil Braithwaite, an applied engineer with NVIDIA's Digital Film Group, assists studios with development and integration of NVIDIA technologies. He has also worked at visual-effects studios in London and Los Angeles, as an R&D programmer, a technical director, and a supervisor.

Wil Braithwaite
NVIDIA GK

特殊効果パイプラインにCUDAを活用する

NVIDIA GK

Thursday, 17 December | 4:30 PM - 6:00 PM
Hall B, Tech Talk Room 2

(Presented in English and Japanese 英語・日本語両方での発表)

本講演は、NVIDIA CUDAアーキテクチャの概要をご紹介し、特に映画の特殊効果を制作するパイプラインでの利用に焦点をあててお話いたします。大規模並列アーキテクチャで利用できる確立された技術とアルゴリズムについて、またVFXの研究開発に有益なライブラリとツールの紹介も行います。GPUコンピューティング革命の基礎を学ぶチャンスです。講演者のウィル・ブレイスウェイトは、NVIDIAデジタルフィルム・グループのアプライドエンジニアとして、現在、NVIDIAのテクノロジを映画スタジオで活用するために技術サポートを提供しています。その前には、ロンドンとロサンゼルスのVFXスタジオで研究開発プログラマ、技術部長、スーパーバイザーを経験しています。

Wil Braithwaite
NVIDIA GK

Exhibitor Tech Talks & Sessions

Friday, 18 December

Going Procedural With Houdini

Side Effects Software Inc.

Friday, 18 December | 10:00 AM - 12:00 PM
Hall B, Tech Talk Room 1

Every day, animators and visual effects artists are being asked to create more shots and achieve more realistic results with tighter deadlines and shrinking resources.

In this talk, senior Houdini artist John Courte demonstrates how Houdini's node-based procedural workflow provides the best tools for organizing and managing your animations and visual effects. Then he shows how these same procedural networks keep you focused on the creative process as your project grows and multiple iterations become essential. Learn how Houdini provides unprecedented levels of flexibility and control to make you more productive in your day-to-day work.

Ct Technology: High-Productivity Throughput Computing on Multicore and Manycore Processors

Intel Corporation

Friday, 18 December | 12:15 PM - 2:00 PM
Hall B, Tech Talk Room 1

Intel Ct Technology provides a generalized, data-parallel programming solution that frees application developers from dependencies on particular hardware architectures. It produces scalable, portable, and deterministic parallel implementations from a high-level specification of a computation. This talk explains the basics of the Ct Technology and supporting tools and then showcases an example application. Ct Technology can harvest both short-vector (SIMD) and thread-level parallelism from code in a single source file. It provides portability across multiple current and future processor architectures, and it can automatically adapt applications to differences in instruction sets, vector widths, core counts, and cache architecture. It offers ease of use through a high-productivity API that does not require extensive training and significantly reduces programming time and effort. It is ideal for applications that require data-intensive mathematical computations such as those found in medical imaging, digital content creation, financial analytics, energy, data mining, science, and engineering.

Exhibitor Tech Talks & Sessions

Friday, 18 December

SIMD Programming With Larrabee: A Second Look at Larrabee New Instructions (LRBni) in Action

Intel Japan K.K. / インテル株式会社

Friday 18 December | 2:15 PM – 4:00 PM
Hall B, Tech Talk Room 1

(Presented in Japanese 日本語での発表)

Larrabee is Intel's revolutionary approach to extending the evolving programmability of the GPGPU to its logical end. The Larrabee architecture features many cores and threads, as well as a new vector instruction-set extension (the Larrabee new instructions - LRBni).

This talk examines the programming methods and hardware instructions that help programmers get the most out of LRBni's extremely wide vector units. Starting with simple math examples that are fairly simple to vectorize, it moves through loops, conditionals, and more complex flow control, showing how to implement these algorithms in LRBni. Next, the numerous choices of data format are examined: when to use SOA or AOS (and what those terms mean!), and how to use gather/scatter most efficiently from the same data structures used in an existing engine. The talk concludes with a quick look at efficient code scheduling and how to use the multiple hardware threads to help absorb instruction latencies.

Learning Objective
Understanding the latest processor architecture from Intel and the instruction set used to program it. This knowledge enables attendee to design the next iteration of their game engines and explore the possibilities available when programming Larrabee natively.

Intended Audience and Prerequisites
This talk is designed for programmers, although it will be interesting to anyone interested in Larrabee and why processor architecture is evolving in Larrabee's direction.

LRBniのワイド・ベクター・ユニットを最大限に活用する、プログラミング手法や新命令セットを検証していきます。はじめは、簡単な算術演算をベクター化するところから、ループ、条件分岐化と複雑さを増して、LRBniを使ったアルゴリズムを実装してみます。

次に、数あるデーター・フォーマットに対しても検証していきます。SOA 対 AOSの使い分け、スキャッター／ギャザーの効率的な使い方を実在するエンジンを例に紹介します。最後に複数のハードウェア・スレッドと効率的なスケジューリングによって、実効命令の遅延を隠蔽（吸収）する手法を説明します。

聴講者が得られるであろう知見:
このセッションでは、開発者が新しい命令セット(LRBni)の柔軟性を利用して課題をクリアするアイデアを提供するとともに、次期ゲーム開発においてこの新命令セットをさらに有効活用するための情報を開示します。

聴講者に期待するスキル:
Larrabeeについて興味がある方であれば、どなたにでも広く聴いていただける内容です。プログラミングに関する基本的な知識があるとなお面白いでしょう。

Exhibitor Tech Talks & Sessions

Friday, 18 December

Behind the Technology, Tools, and Talent of Lucasfilm Animation Singapore

Lucasfilm Animation Company Singapore B.V.

Friday, 18 December | 2:30 PM - 3:45 PM
Hall B, Tech Talk Room 2

Using examples from Lucasfilm's first overseas studio (Lucasfilm Animation Singapore), this presentation illustrates how digital-media teams can effectively leverage technology, tools, and talent to produce high-quality work while allowing freedom to learn, explore artistically, and innovate. John Sanders, Head of Production Resources, discusses the pioneering approach to building Lucasfilm's technology pipeline in Singapore – adopting, adapting, and developing entirely new tools to work seamlessly with Lucasfilm in the US. Because tools and techniques are always changing, Tad Leckman, Director of Training, addresses the intensive, continuous training that Lucasfilm delivers to artists at all levels. The talk concludes with a review of open positions by recruiters from Lucasfilm Animation Singapore, ILM Singapore, and LucasArts Singapore. Find out how to become part of this exciting and dynamic team that is contributing to animation, games, and visual effects, all under one roof.

What's New With Pixar's Core Rendering Technology: RenderMan

Pixar Animation Studios

Friday, 18 December | 4:30 PM - 5:45 PM
Hall B, Tech Talk Room 1

The first part of this talk and demonstration focuses on the technology used to render the imagery for "Up". Several case studies from the film show how Pixar develops shaders, from initial photo reference and concept art to the final lit shot. The second half of the talk is a demonstration of RenderMan Studio, showing how RenderMan can be incorporated into your Maya workflow in a straightforward manner, and a review of some of the features in the latest release of RenderMan Pro Server 15.0.

『Designing Human-Robot Interaction: 人とロボットの関係性の中に発現する知能』

Friday, 18 December | 16:15–18:00
Hall B, Tech Talk Room 2

人とロボットのインタラクションを巡る研究・開発動向とその可能性についての各パネリストのプレゼンテーションをもとにディスカッションを展開します。ロボットの身体性や学習能力による「知能」のデザイン、またロボットの介入による人間の行動の変化や新しい形のコミュニケーションの場の形成など、SIGGRAPHにも馴染み深いインタラクティブ技術の可能性を討論します。

Exhibitor Tech Talks & Sessions

Saturday, 19 December

『若者は本当にロボットに人生を懸ける意義があるのか？！』

Saturday, 19 December | 12:15 PM - 2:00 PM
Hall B, Tech Talk Room 1

ロボット開発の最前線で奮戦するパネリスト達の本音を聞きたい。ロボット開発とロボット産業の現状と課題、そして夢。想いの丈を語ってもらいます。「若者は本当にロボットに人生を懸ける意義があるのか？！」研究領域として、ビジネス領域として、ロボットは結局のところどのようなビジョンを描けるのか。刺激的で、かつ挑戦的なトークが繰り広げられるはずです。

Bringing Interactive Realism to Your Applications

NVIDIA GK

Saturday, 19 December | 12:30 PM - 2:00 PM
Hall B, Tech Talk Room 2

(Presented in English and Japanese 英語・日本語両方での発表)

The processing power of modern GPUs is fundamentally changing the quality, speed, and intensity of interactive experiences. This talk explains how new software engines, written to unleash the processing power of the GPU, can be leveraged to speed interaction, increase scene size, simulate physics, make ray tracing interactive, or produce physically correct photorealism. It describes and demonstrates software solutions that can be employed to build state-of-the-art applications that run as fast as possible, while producing maximum quality.

Phillip Miller
NVIDIA GK

インタラクティブなリアリズムを持つアプリケーションを構築する

NVIDIA GK

Saturday, 19 December | 12:30 PM - 2:00 PM
Hall B, Tech Talk Room 2

(Presented in English and Japanese 英語・日本語両方での発表)

最新のGPUが持つ処理能力によりインタラクティブな体験が、質、スピード、密度が根底から大きく変わろうとしています。GPUの能力を解放できるソフトウェアエンジンを活用すれば、インタラクティブなアプリケーションを高速化する、シーンサイズを大きくする、物理演算をシミュレーションする、インタラクティブにレイトレーシングを行う、物理的に正しい形で写真のようなリアリズムを実現するなどが可能になります。本講演では、最新式アプリケーションの構築に今すぐ使えるソフトウェアソリューションの説明とデモを行います。NVIDIAのハードウェアとソフトウェアを活用し、高速で動作しつつ高いクオリティを提供する方法を学ぶことができます。

Phillip Miller
NVIDIA GK

Exhibitor Sessions

GPU Computing Master Class–NVIDIA

Wednesday, 16 December 2009
Room 301/302, Pacifico Yokohama

GPU computing has gathered tremendous interest as a solution that can handle complex computational problems and massive datasets in real time. At the core of GPU computing, the C-based Integrated Development Environment, CUDA, has become the quintessential component of the next generation of application development. In this session, specialists from NVIDIA succinctly explain the basics and applications of GPU computing.

GPUコンピューティングの世界へようこそ

2009年12月16日(水)
場所:パシフィコ横浜会議センター301/302号室

GPU コンピューティングは複雑な計算問題や膨大なデータセットをリアルタイムで解決するソリューションとして現在最も注目を集めています。GPUコンピューティングの核となるC言語の統合開発環境「CUDA」が次世代のアプリケーション開発に欠かせないものとなっています。

この度NVIDIAのGPUコンピューティングのスペシャリストたちが基礎から応用まで分かりやすくご説明いたします。

Khronos Developer University

Free update sessions on cross-platform APIs for advanced graphics and media acceleration.

Friday, 18 December 2009 13:00–19:00
Room 313/314, Pacifico Yokohama

Khronos open standards are the foundation of many of the products on display at SIGGRAPH ASIA 2009. If you develop multimedia content, these APIs let you tap into cutting-edge graphics and media processing on platforms ranging from high-end workstations to mobile phones. This half-day series of sessions provides up-to-the-minute updates on OpenCL, OpenGL, COLLADA, and hand-held graphics standards such as OpenGL ES, OpenVG, and OpenMAX IL.

Khronos Developer University ご案内

先進のグラフィックス/メディア・アクセラレーション向けクロスプラットフォームAPIを紹介する無料セミナー

2009年12月18日12:00-19:00
場所:パシフィコ横浜会議センター413号室

クロノス・グループが仕様策定する各APIは、高性能コンピュータから携帯・組込み製品に至るさまざまな製品で、最先端グラフィックスやメディア・プロセッシングを実現するために使用されています。12月18日の午後開催される無料セミナー「Developer University」では、OpenCL, OpenGL, COLLADAをはじめOpenGL ES, OpenVG, OpenMAX ILといった各APIの最新情報を、会員企業各社の導入事例を交えながらご紹介します。

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ACM SIGGRAPH Organization Overview

ACM SIGGRAPH

In the span of 35 years, ACM SIGGRAPH has grown from a handful of computer graphics enthusiasts to a diverse group of researchers, artists, developers, filmmakers, scientists, and other professionals who share an interest in computer graphics and interactive techniques. Our community values excellence, passion, integrity, volunteerism, and cross-disciplinary interaction. We sponsor not only the annual SIGGRAPH conference and SIGGRAPH Asia, but also focused symposia, chapters in cities throughout the world, awards, grants, educational resources, online resources, a public policy programme, and the SIGGRAPH Video Review.

Membership

The SIGGRAPH community depends on your support. Help us continue our global efforts in education, communications, and advocacy by joining ACM SIGGRAPH for US $35 per year (US $25 per year for students, US $40 for Pioneers, and US $28 for Eurographics members). Become an ACM SIGGRAPH member and receive a siggraph.org email alias, access to the archive of SIGGRAPH Proceedings in the ACM Digital Library, Computer Graphics e-Quarterly, discounted registrations on ACM SIGGRAPH sponsored programmes and events including the annual SIGGRAPH and SIGGRAPH Asia conferences and partner conferences such as Eurographics, as well as discounts on publications and preferred vendor deals on valuable merchandise. For more details on membership or to join online, visit www.siggraph.org and select “Membership.”

For those of you who are already members, thank you for your continued and loyal support.

ACM

ACM SIGGRAPH’s parent organisation is ACM, the Association for Computing Machinery. ACM is the world’s largest educational and scientific computing society, uniting educators, researchers, and professionals to inspire dialogue, share resources, and address the field’s challenges. ACM strengthens the computing profession’s collective voice through strong leadership, promotion of the highest standards, and recognition of technical excellence. ACM supports the professional growth of its members by providing opportunities for life-long learning, career development, and professional networking. Many ACM SIGGRAPH members also join ACM.

The benefits of ACM membership include full access to online books and courses, the ACM Career & Job Center, subscriptions to ACM’s popular email alert news digests TechNews and CareerNews, and the online newsletter MemberNet. ACM members may subscribe to the Digital Library and receive full access to the Guide to Computing Literature, which features more than one million bibliographic citations from the vast world of computing. ACM members also receive discounts on cutting-edge magazines, journals, books, and conferences.

For more information, visit: www.acm.org.

Awards

ACM SIGGRAPH awards the prestigious Steven A. Coons award for lifetime achievement, the Computer Graphics Achievement Award for notable achievements, the Outstanding

Service Award for extraordinary service to ACM SIGGRAPH by a volunteer, and the Significant New Researcher Award, for new contributors to our field. Beginning in 2009, SIGGRAPH will also award the Distinguished Artist Award for lifetime achievement in digital art.

For a list of past award recipients, visit: www.siggraph.org/awards.

Education Committee

The ACM SIGGRAPH Education Committee works to support computer graphics education as well as the use of computer graphics in education. Computer graphics education encompasses technical, creative, and developmental studies in curricular areas ranging from computer science to digital arts. The Education Committee undertakes a broad range of projects and activities in support of the CG education community, such as curriculum studies, resources for educators, and SIGGRAPH conference-related activities. This includes the international, juried SpaceTime Student Competition & Exhibition and much more.

For more information, please visit: education.siggraph.org.

Digital Arts Community

The ACM SIGGRAPH Digital Arts Community committee serves to foster the evolution of a strong digital arts community within the international organisation and to promote a dialogue between visual artists and the larger SIGGRAPH community. One of its main projects is the creation of a content-rich interactive Arts Portal, arts.siggraph.org, to provide a central place for artists to share resources, information, artwork, and opportunities, and provide a practical way for all ACM SIGGRAPH members to follow developments in the arts, stay connected, and identify potential collaborators.

For more information, visit: arts.siggraph.org.

External Relations Committee

ACM SIGGRAPH has agreements with a number of organisations and conferences around the world. To see the list of current affiliations or to inquire about what is involved in entering into such a relationship, stop by the ACM SIGGRAPH Membership booth or visit: www.siggraph.org/affiliations.

ACM SIGGRAPH Organization Overview

Professional & Student Chapters

Chapters of ACM SIGGRAPH exist in 65 cities in 16 countries around the world. They form an international multi-cultural network of people who develop, share, continue, and extend the work and achievements presented at the annual conference. Chapter members include those involved in research, development, education, art, gaming, visualisation, and entertainment, just to name a few.

For more information about the ACM SIGGRAPH network of chapters, or if you would like to start a Professional or Student Chapter, visit: www.siggraph.org/chapters.

Publications

ACM SIGGRAPH publications provide the world's leading forums for computer graphics research. Our conference series provides the largest source of citations in computer graphics literature.

Publications are available to ACM SIGGRAPH members for substantial discounts.

See: www.siggraph.org/publications

Small Conferences and Symposia

ACM SIGGRAPH helps organise and sponsor focused conferences, workshops, and other symposia around the world on topics related to computer graphics and interactive techniques. These gatherings enable groups with specific interests to get together and exchange information.

To see the list of symposia or find out how to get help for a conference you'd like to organise, stop by the ACM SIGGRAPH Membership booth or visit: www.siggraph.org/conferences.

Volunteers

All of the programmes developed by ACM SIGGRAPH rely heavily on volunteer support.

As a member, you are eligible to serve in some of ACM SIGGRAPH's most visible positions, including leading a professional chapter, chairing the annual conference, or serving on the ACM SIGGRAPH Executive Committee. For more information, see: www.siggraph.org/gen-info/volunteerpositions.html.

ACM Cooperative Agreements

Annecy

Annecy has been showcasing the very best in animation for over 45 years, making it the industry's leading international competitive festival. The capacity to present and promote animation in all its different forms has made Annecy a world-wide point of reference for the animation industry.

www.annecy.org

China Cartoon Industry Forum (CCIF)

Supported by the Chinese government, the China Cartoon Industry Forum was founded by the Cartoon Commission of China TV Artists Association. As the most influential Chinese conference, CCIF promotes industrialization, internationalization, and market development. CCIF operates two projects, which are 'Asian Youth Animation & Comics Contest' (AYACC) and 'China Animation& Comics Game' (CACG). Asian Youth Animation & Comics Contest is aimed to be the top annual award for Asian original animation and comic. CACG is committed to building an animation-training system to provide vocational animation and comics training courses studies for all trainees in China.

www.ccif.com.cn

www.51cacg.com

(would be launched with English and Chinese versions soon)

China National Center for Developing Animation, Cartoon, and Game Industry (NCACG)

NCACG is a non-governmental organization approved by the Ministry of Culture of the People's Republic of China to serve and promote creative culture and the animation, cartoon, and game industries in China by providing four core services: education and training, research and development, industrial incubation, and international cooperation. Sponsored by the Ministry of Culture and the Shanghai Municipal Government, NCACG's 6th China International Animation, Cartoon & Game Fair will be held 9-12 July 2010 in Shanghai.

www.ncacg.org

Computer Graphics Arts Society (CG-ARTS)

The Computer Graphics Arts Society, officially recognized by the Ministry of Education, Culture, Sports, Science and Technology in 1992, is a publicly funded body dedicated to promoting Japanese computer graphics education from drafting curricula to the development and publication of teaching materials, nurturing instructors, and providing certification tests to evaluate the ability of each individual. It is also dedicated to developing a distinctive Japanese media arts culture in the 21st century by hosting the Computer Graphics Contest for Students since 1995 and co-organizing the Japan Media Arts Festival in conjunction with the Agency for Cultural Affairs since 1996.

www.cgarts.or.jp/

Digital Content Association of Japan (DCAJ)

DCAJ is a government-approved non-profit organization promoting the Japanese digital content industry. It organizes Digital Content Expo (DC EXPO) 2009 (www.dcexpo.jp) from October 22 to 25 at Miraikan Museum in Tokyo.

http://www.dcaj.org/outline/english/index.html

Eurographics

The European Association for Computer Graphics is a professional association that assists members with their work and careers in computer graphics and interactive digital media. Eurographics has members worldwide and maintains close links with developments in the USA, Japan, and other countries, by inviting speakers from those countries to participate in Eurographics events and by sending representatives to other events. Eurographics 2010 will be held in Norrköping, Sweden
May 3-7, 2010.

www.eg.org

FMX

FMX is the primary European meeting of the digital community. Presenting cutting edge digital entertainment, the conference addresses the interests of professionals in creation, production and distribution from all corners of the industry. Innovative approaches in the animation, visual effects and gaming industries create a focus for discussions about the convergence and future of digital entertainment.

Meet top names in the industry as they present their latest achievements, interview with recruiters searching for new talent and test hard- and software innovations directly with developers – all in an open atmosphere of qualified discussion and informal encounter. The level of knowledge and experience and the openness with which it is shared has made FMX a set date for cg professionals all around the world.

www.fmx.de

IMAGINA

IMAGINA will be held at the Grimaldi Forum in Monte-Carlo, 3- 5 February 2010.

IMAGINA, The European 3D Simulation and Visualisation Event centred on solutions which assist in designing and reaching decisions through visualisation and simulation.

www.imagina.mc

Laval Virtual

The 12th International Conference on Virtual Reality will be held on April 7-11, 2010, in Laval, France. First Event in Europe dedicated to Virtual Reality, Realtime 3D and Interactive Techniques, Laval Virtual is where virtual reality users share their latest techniques from their fields of expertise.

www.laval-virtual.org

Seoul International Cartoon & Animation Festival (SICAF)

SICAF focuses on the dynamic new-media environment and presents current trends in cartoons and animation through Exhibition Convention, Animated Film Festival and SPP Market.

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http://www.sicaf.org

VIEW Conference

VIEW Conference is Italy's premiere international event on computer graphics, interactive techniques, animation and vfx, and design and videogames. VIEW 2009, Digital Transformations, from November 4-7 in Turin, Italy, will continue to propose the most up-to-date discussions by world-class experts through lectures, meetings, tributes, exhibits, screenings and demo presentations.

www.viewconference.it

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Computer Animation Festival

Digital Content Association of Japan

IMAGICA Corp.

LightIRON Digital

Polygon Pictures

Sony Marketing Japan

Courses

Autodesk

Pixar Animation Studios

Vantan

Educators Program

CG Arts Society

Emerging Technologies

Microsoft Research Cambridge

Mobile Life VINN Excellence Centre

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University of California, Davis