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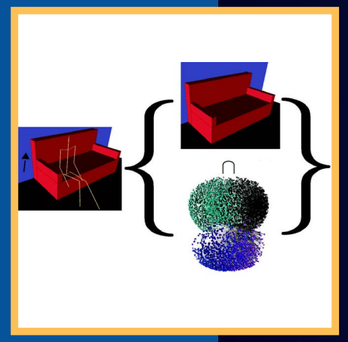

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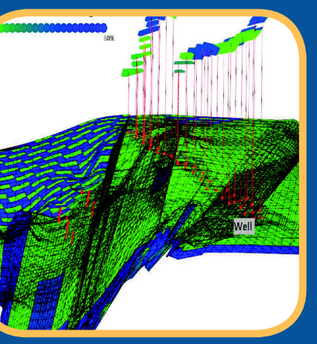

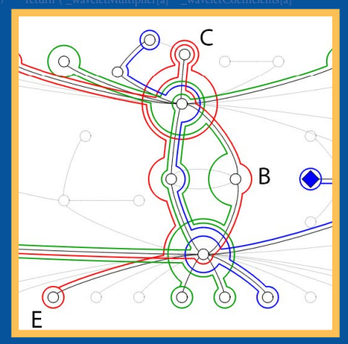

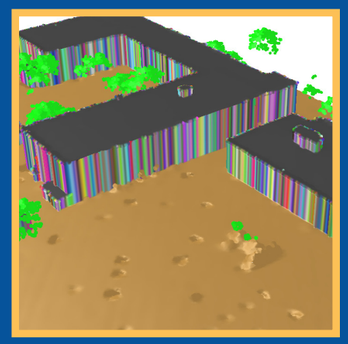

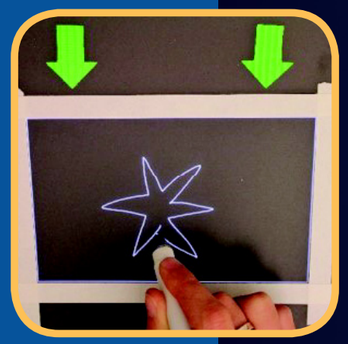

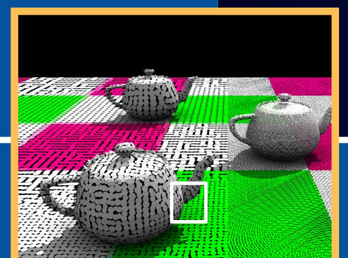

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President's Welcoming Letter

Canadian Human-Computer Communications Society / Société canadienne du dialogue humain-machine

Paul G. Kry
School of Computer Science
McGill University, Canada

The Canadian Human-Computer Communications Society (CHCCS) / Société Canadienne du Dialogue Humaine Machine (SCDHM) is a non-profit organization dedicated to advancing research and education in computer graphics, visualization, and human-computer interaction. CHCCS/SCDHM is a Special Interest Group within the Canadian Information Processing Society (CIPS).

The primary activity of CHCCS/SCDHM is sponsoring the annual Graphics Interface conference, the longest-running regularly scheduled conference on interactive computer graphics. In most years, Graphics Interface is held as part of a larger suite of conferences. This year the AI/GI/CRV 2014 conference, encompassing Artificial Intelligence and Computer and Robotic Vision along with Graphics Interface, is located in Montreal, Quebec. The conference promises to be an excellent event, with a selection of high quality papers in computer graphics, visualization, and human-computer interaction, accompanied by a lively posters and demo session featuring late breaking ideas and work in progress.

In addition to its annual conference, CHCCS/SCDHM sponsors several awards. The annual Michael A.J. Sweeney Award recognizes best student papers presented at the conference. The annual Alain Fournier Dissertation Award and the Bill Buxton Dissertation Award recognize the best Ph.D. dissertations awarded in Canada during the previous year for computer graphics and human-computer interaction, respectively. The annual CHCCS/SCDHM Achievement Award is presented to a Canadian who has made substantial research contributions to computer graphics, visualization, or human-computer interaction. Finally, the CHCCS/SCDHM Service Award is presented to a Canadian who has rendered substantial service contributions to the society or to the research community.

Each year the Awards Committee receives nominations and selects a winner of the Achievement Award and, from time to time, a winner of the Service Award. The current committee is chaired by Marilyn Tremaine, Rutgers University, and has as members Kellogg Booth, University of British Columbia, and Brian Wyvill, University of Bath. I thank the Awards committee for their efforts in finding a very well-deserving recipient. Nominations for the Alain Fournier Award and Bill Buxton Award are due mid-February of each year, and the winners are selected by independent committees coordinated by Pierre Poulin. I am very grateful to Pierre and the members of the respective committees for their work in identifying the top dissertations of 2013. Finally, the Michael A.J. Sweeney Award winners are selected by the program cochairs in consultation with the program committee.

The Annual General Meeting of CHCCS/SCDHM is held every year during the Graphics Interface conference, to review the previous year's activities and elect the executive committee. Current members of the executive committee are

- Paul G. Kry, McGill University, president
- Pierre Poulin, Université de Montréal, vice president
- Michael McGuffin, École de Technologie Supérieure, treasurer
- William Cowan, University of Waterloo, past president
- Derek Reilly, Dalhousie University, editor-in-chief
- James Stewart, Queen's University, web master

All Graphics Interface attendees are invited to attend the General Meeting, or to contact any member of the executive committee about CHCCS/SCDHM. I encourage everyone interested in the future of Graphics Interface to attend and get involved. Recent activities of CHCCS/SCDHM include scanning old proceedings to build an archive going back to 1971, and correcting inconsistencies in the ACM Digital Library for proceedings dating back to 2002. Since 2012, top graphics papers at Graphics Interface have been invited to submit extended versions to a special section of Computers & Graphics, and there are ongoing efforts to find a journal with which we can do the same for the top papers in the area of human-computer interaction.

On behalf of the society, and of all those who have worked to put on this year's conference, I extend a warm welcome to all the attendees of AI/CRV/GI 2014. I am pleased to serve a cochair of this year's conference, and wish to thank cochair Andrea Bunt, along with the committee members and referees for all their hard work in creating the conference program. And most important, I wish to thank all the authors who submitted their research. Without their commitment there would be no conference.

Preface

A Message from the Program Chairs

Graphics Cochair
Paul G. Kry
McGill University, Canada

HCI Cochair
Andrea Bunt
University of Manitoba, Canada

You are holding the proceedings for Graphics Interface 2014. Now in its 40th year, Graphics Interface is the oldest continuously-scheduled conference in computer graphics and human-computer interaction; the conference dates back to 1969, when it was the "Canadian Man-Computer Communications Seminar", changing its name in 1982 to Graphics Interface. This year, Graphics Interface takes place in Montreal, Quebec from May 7th to May 9th.

The program for Graphics Interface 2014 features 28 papers. We received 40 (HCI) + 36 (Graphics) submissions. We have roughly equal numbers of papers for both tracks, with acceptance rates of 38% for the HCI track and 36% for the Graphics track.

The program committee comprised 29 experts from Graphics and HCI. Each paper was formally reviewed by two committee members, at least two external reviewers, and often received informal reviews from more. A fully double-blind reviewing process was used: the identity of the paper authors was known only to the program committee chairs and to the primary committee member assigned to the submission. We thank the program committee and the external reviewers for ensuring rigor and integrity in the reviewing process.

The Michael A. J. Sweeney Award will be awarded at the conference to the best student papers in graphics and HCI. This year, NVIDIA has kindly sponsored Graphics Interface by donating GTX780 graphics cards as prizes. The posters session is also an important part of the conference, featuring late breaking research and work in progress. Best posters in graphics and HCI will be recognized at the conference, and Intel has kindly sponsored Graphics Interface this year by donating Bay Trail powered Windows tablets as prizes.

Since 2012, authors of selected top papers in graphics have be invited to submit extended and revised manuscripts to be considered, with partial reviewer continuity, for journal publication in a special section of Computers & Graphics. We look forward to seeing the final extended versions of these selected papers later this year in the special section on graphics interaction, while we also continue efforts to find a journal with which we can do the same for the top papers in HCI.

We are proud to include keynote talks from two invited speakers, one Achievement Award winner, and two dissertation award winners. The two invited speakers, Elizabeth Churchill, eBay Research Labs, and Matthias Müller, NVIDIA are both well known for their exemplary contributions to their disciplines. Our congratulations to Eugene Fiume, University of Toronto, this year's recipient of the recipient of the CHCCS/SCDHM Achievement Award. We also congratulate the two dissertation award winners, Hua Li, University of North Carolina, Wilmington (2013 Alain Fournier Dissertation Award winner), and Xing-Dong Yang, University of Calgary (2013 Bill Buxton Dissertation Award winner).

We would like to thank various people who contributed to the behind-the-scenes conference organization, especially Pierre Poulin, Kelly Booth, Michael McGuffin, Derek Reilley, and Meghan Haley. Thanks also go out to Christopher Batty, the poster chair, Atefeh Farzindar, the AI/GI/CRV general chair, and local organizers Philippe Langlais and Guillaume-Alexandre Bilodeau. Lastly, we owe a great debt to James Stewart and Precision Conference Solutions for handling the electronic submission and review system; James's patience and responsiveness made the process run as smoothly as we could have hoped.

For further information about the conference series, you can visit the official web site, http://www.graphicsinterface.org

Organization

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McGill University, Canada

Andrea Bunt
University of Manitoba, Canada

Posters Chair

Christopher Batty
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Koji Yatani
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Michael A. J. Sweeney Award 2014

Canadian Human-Computer Communications Society /
Société canadienne du dialogue humain-machine

The CHCCS/SCDHM honours the memory of Michael A. J. Sweeney through an annual award to the best student papers presented at each year's Graphics Interface conference. The winning papers selected by the program committee, one graphics paper and one HCI paper, are chosen from among accepted papers that have a student as lead author and for which one or more student authors are presenting the paper.

Best Student Papers 2014

In Memory
Michael A. J. Sweeney, 1951-1995

Graphics 2014 Award Winner

"Interactive Light Scattering with Principal-Ordinate Propagation" by Oskar Elek, Tobias Ritschel, Carsten Dachsbacher, and Hans-Peter Seidel.

Biographies

Oskar Elek received his M.S. degree in 2011 at the Charles University, Prague, and is currently pursuing a Ph.D. at the Max Planck Institut (MPI) Informatik and the Multimodal Computing and Interaction Cluster of Excellence (MMCI) of the Saarland University, Saarbruecken. His main research interests include efficient physically-based rendering and simulation of light scattering in participating media.

Tobias Ritschel is a senior research group leader at the MPI Informatik and the MMCI Saarbruecken. His interests include interactive and non-photorealistic rendering, human perception and data-driven graphics. He received the Eurographics Ph.D. dissertation award in 2011.

Carsten Dachsbacher is a full professor at the Karlsruhe Institute of Technology (KIT) and the head of the Institute for Visualization and Data Analysis at KIT. His research focuses on high performance graphics, (interactive) global illumination, scientific visualization and perceptual rendering.

Hans-Peter Seidel is the scientific director and chair of the Computer Graphics Group at the MPI Informatik and a professor of computer science at Saarland University. In 2003, he received the Leibniz Preis, the most prestigious German research award, from the German Research Foundation (DFG). He is the first computer graphics researcher to receive such an award.

HCI 2014 Award Winner

"Experimental Study of Stroke Shortcuts for a Touchscreen Keyboard with Gesture-Redundant Keys Removed" by Ahmed Sabbir Arif, Michel Pahud, Ken Hinckley, and Bill Buxton.

Biographies

Ahmed Sabbir Arif is a Ph.D. candidate at York University, Canada in the Department of Computer Science & Engineering. His primary research interests are in the area of human-computer interaction. As a researcher he has worked on a wide-range of projects, both independently and in collaboration with academic and industrial research labs.

Michel Pahud has a Ph.D. in parallel computing from the Swiss Federal Institute of Technology. He has won several prestigious awards including the Logitech prize for an innovative industrially-oriented multiprocessors hardware/software project. He joined Microsoft in 2000 to work on different projects, including videoconferencing. More recently, he has been focusing on human-computer interaction at Microsoft Research. His research includes seamless collaborative technologies, bimanual interactions, and haptics.

Ken Hinckley is a Principal Researcher at Microsoft Research, where he has spent the last 17 years investigating novel input devices, device form-factors, and modalities of interaction. Ken is perhaps best known for his work on sensing techniques, cross-device interaction, and pen computing. He has published over 75 academic papers and is a named inventor on upwards of 150 patents. Ken holds a Ph.D. in Computer Science from the University of Virginia, where he studied with Randy Pausch.

Bill Buxton is a principal researcher at Microsoft Research. His focus for over 35 years has been in improving user experience through design, and improved theories, technology and techniques of interaction.

Alain Fournier Award 2013

Canadian Human-Computer Communications Society / Société canadienne du dialogue humain-machine

On August 14th, 2000, Dr. Alain Fournier passed away. He was a leading international figure in computer graphics, and a strong and frequent contributor to the Graphics Interface conference. His insights, enthusiasm, wisdom, vast knowledge, humour, and genuine friendship touched everyone he met.

The "Alain Fournier Memorial Fund" was created to celebrate his life, to commemorate his accomplishments, and to honour his memory. It rewards an exceptional computer graphics Ph.D. dissertation defended in a Canadian University over the past year. The winning dissertation is selected through a juried process by a selection committee consisting of accomplished researchers in computer graphics.

For more information about the "Alain Fournier Memorial Fund", and information about donation, please visit http://www.cs.ubc.ca/~fournier.

Hua Li

University of North Carolina, Wilmington, USA
CHCCS/SCDHM Alain Fournier Award Recipient 2013

This year, Dr. Hua Li is the recipient of the Alain Fournier Ph.D. Dissertation Award. Her dissertation, entitled *Perception-Motivated High Quality Stylization*, made several outstanding research contributions to non-photorealistic image stylization.

Her central observation approached image stylization from the angle of priority, where local greedy algorithms are tuned to achieve great results by properly structuring how local operations are ordered and applied. She applied her priority-based approach to automatic halftoning, stippling, and line art, where her algorithms always delivered very beautiful results. In fact, her stippling results are today considered the state-of-the-art. Her work and expertise also extend to image filtering, procedural image synthesis, non-photorealistic rendering, and human-subject evaluations of non-photorealistic images.

Hua completed her B.Eng. in Mining Engineering and her M.Eng. in Control Theory and Control Engineering, both at the University of Science and Technology in Beijing, and her Ph.D. in Computer Science at Carleton under the supervision of Professor David Mould.

She has co-authored a paper at Eurographics, two at Graphics Interface (one of which received the best student paper in graphics), two at NPAR, one at ARTECH (honorable mention), as well as other publications; a number of her contributions have appeared as extended versions in journals. She has been a regular reviewer in Graphics Interface and other top computer graphics conferences and journals. She is now a faculty member at the University of North Carolina, Wilmington.

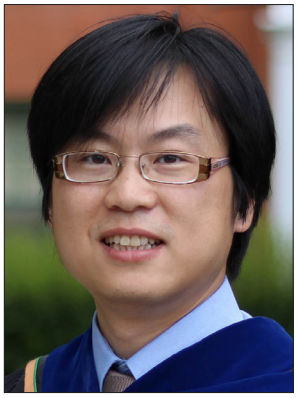
For more information, please visit: http://people.uncw.edu/lihua/

Bill Buxton Dissertation Award 2013

Canadian Human-Computer Communications Society / Société canadienne du dialogue humain-machine

The award is named in honour of Bill Buxton, a Canadian pioneer who has done much to promote excellence, both within Canada and internationally, in the field of Human-Computer Interaction. Bill truly advocates HCI. He challenges how academics and practitioners think, and inspires them to do things differently. This is why we are proud to name this award after him.

The winning dissertation is selected through a juried process by a selection committee consisting of accomplished researchers in Human-Computer Interaction.



Xing-Dong Yang

iLab
University of Calgary, Canada
CHCCS/SCDHM Alain Fournier Award Recipient 2013

The recipient of the 2013 award for the best doctoral dissertation completed at a Canadian university in the field of Human-Computer Interaction is Dr. Xing-Dong Yang.

In his dissertation, *Blurring the Boundary Between Direct and Indirect Mixed Mode Input Environments*, he introduces and studies how direct and indirect input modes can co-exist and improve our digital interactions. His dissertation breaks new ground by demonstrating that input methods need not be confined to only one type, but can instead be designed to cleverly shift across different modes. His work is exemplary in showing how to build and study not one, but several prototypical systems and on diverse platforms, from the desktop to wearables, which encapsulate the concepts promoted in his thesis.

Through four carefully designed systems, Xing-Dong's dissertation examines how mixed input modes can be implemented through software and hardware innovations and then leveraged for common, everyday computing tasks. In one example, the Magic Finger, he exposes the ability to turn the finger into a very precise pointer. In another example, he transforms the ubiquitous desktop mouse, known for its ability to select pixel-size objects, into an input device suitable for coarse and direct manipulation. The performance of the proposed systems was evaluated from various perspectives through a set of carefully designed user and system evaluations.

Xing-Dong earned his Ph.D. in Computer Science with a specialization in Human-Computer Interaction from the University of Alberta, where he worked under the supervision of Dr. Pierre Boulanger. He has generated a large number of publications, many in top-tier venues for HCI research, including the ACM Conference on Human Factors and Systems (ACM CHI) and the ACM Conference on User Interfaces and Technology (ACM UIST). He has over twenty publications in the fields of HCI, mobile computing, wearable technology and haptic interfaces. His work has also been recognized through best paper nominations at ACM CHI and ACM MobileHCI, featured in the public press through Discovery News, NBC, and New Scientist, and has led to five US patent applications filed between 2010 and 2013. He is currently a Postdoctoral Fellow in the iLab, at the University of Calgary, where he works with Dr. Tony Tang and Dr. Saul Greenberg.

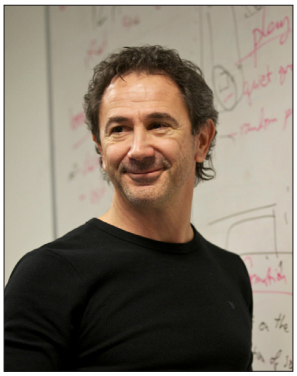
For more information, please visit: http://webdocs.cs.ualberta.ca/~xingdong/

Achievement Award 2014

Canadian Human-Computer Communications Society / Société canadienne du dialogue humain-machine

The CHCCS/SCDHM Achievement Award is presented periodically to a Canadian researcher who has made a substantial contribution to the fields of computer graphics, visualization, or human-computer interaction. Awards are recommended by the CHCCS/SCDHM Awards Committee, based on nominations received from the research community. The 2014 members of the Awards Committee are Kellogg Booth, Marilyn Tremaine, and Brian Wyvill.

The 2014 CHCCS/SCDHM Achievement Award of the Canadian Human Computer Communications Society is presented to Eugene Fiume of the University of Toronto.



Eugene Fiume
University of Toronto, Canada
CHCCS/SCDHM Achievement Award Recipient 2014

Eugene is Professor and past Chair of the Department of Computer Science at the University of Toronto. He directs the Masters of Science in Applied Computing programme and has long been a member of the Dynamic Graphics Project. After earning a B.Math. degree in 1981 at the University of Waterloo and M.Sc. and Ph.D. degrees from the University of Toronto in 1983 and 1986, respectively, he became an NSERC Postdoctoral Fellow and Maitre Assistant at the University of Geneva, Switzerland. He was then awarded an NSERC University Research Fellowship in 1987 and returned to the University of Toronto where he has held a faculty position ever since. During that time, Eugene has made fundamental contributions to the field of computer science, primarily in the area of computer graphics, where he specializes in modelling and rendering. These are two of the core problems that define the essence of computer graphics. The models used in computer graphics are often ad hoc and based on convenient approximations that lack rigorous theoretical justification. Sometimes it is possible to do better. Eugene's work is distinguished by formal, mathematical frameworks through which a deeper understanding of objects and their behaviours at various levels of complexity supports more efficient and accurate rendering.

This focus on mathematical precision arose from his early theoretical training. His doctoral research presented a mathematical formalization of raster graphics that provided a framework within which a number of problems could be understood and solutions compared. The importance of this and much of the subsequent work by Eugene has been his insistence on establishing a sound theoretical basis for all aspects of computer graphics. In this endeavour he has been extremely successful, as evidenced by the quantity and the quality of his publications in leading journals and the most prestigious international conferences. His research over more than thirty years spans most aspects of realistic computer graphics, including computer animation, modelling of natural phenomena, and illumination algorithms, as well as strong interests in imaging, software architectures, and parallel algorithms. He has written two books and authored or co-authored over 130 papers on these topics. Fourteen doctoral students and 45 masters students have graduated under his supervision.

His work on various problems related to the modelling and rendering of natural phenomena is particularly noteworthy. These solutions are inspired by the techniques of control theory, applied mathematics and physics, but they frequently are subject to a different set of constraints from similar problems found in the other mathematical sciences. In mathematical simulations, such as those conducted in computational fluid dynamics, the traditional goal is to accurately represent aggregates of energy and mass transported over time. Good numerical solutions may not lead directly to realistic or aesthetically pleasing depictions. For example, a fluid flow model might accurately predict the volume of water that flows through a river channel, but it might not provide the depictions of surface details of the waves and eddies that are of most interest in a computer animation. Eugene and his students have looked at techniques that balance the need for both visually interesting and physically plausible depictions that are computationally feasible. This has led to many notable breakthroughs and helped launch the careers of some of the current leaders in the field. Twenty years ago, with Michiel van de Panne (1993), and concurrent work by Ngo and Marks, he introduced neural networks to computer graphics. Work with Jos Stam (1995) in simulating wind, smoke, clouds and fire has set the standard for future efforts in this area and led to successful commercial deployment in hundreds of films requiring the realistic simulation and control of natural phenomena. The "wire" deformation technique, developed with Karan Singh (1998), is now ubiquitous in practical geometric modelling and animation. Michael McCool and Eugene created a simple, often-used poisson-disk sampling algorithm (1990). With George Drettakis, he developed an early penumbral shadow rendering algorithm (1994). With Victor Ng-Thow-Hing, he developed an early volume preserving skeletal muscle model

For more information, please visit: http://www.dgp.toronto.edu/~elf/

(2003); indeed, his interest in biomechanical and biomedical simulation continues to this day in his collaborations with Sami Siddique and Dongwoon Lee. Derek Nowrouzezahrai and Eugene have contributed to data-driven animation and fast rendering for animated characters. With Tyler de Witt and Christian Lessig (2011-present), he developed very efficient real-time control techniques for the artistic animation of fluids as well as fast algorithms for the rotation of signals on the sphere. His work with Lessig continues on the mathematical characterization of light transport, the development of spherical orthogonal wavelets, as well as the introduction of reproducing kernel Hilbert spaces to computer graphics. Alain Fournier was his most frequent collaborator, and together they made many contributions to sampling, filtering and rendering problems.

Eugene has contributed to the computer graphics and digital media communities in many other ways. He has won two teaching awards at the University of Toronto, as well as Innovation Awards from the Information Technology Research Centre of Ontario (ITRC) for research in computer graphics, an award from Burroughs-Wellcome for biomedical research, and an NSERC Synergy Award for innovation and industrial collaboration in visual modelling with Dr. Gordon Kurtenbach of Autodesk (2012). He served as the papers chair for SIGGRAPH 2001, chair of the ACM SIGGRAPH Awards Committee (2003-2008) and the ACM Paris Kanellakis Awards Committee (2011), and general cochair of the ACM Symposium for Computer Animation (2008) and Pacific Graphics (2011). He has served on numerous scientific and corporate boards both within Canada and internationally. He has also contributed to the industrial practice of computer graphics through his role as Research Scientist and then Director of Research and Usability Engineering at Alias|wavefront (now part of Autodesk) from 1995 to 1999. He has also served on many industrial and academic boards.

Eugene is currently Principal Investigator for a $6M Canada Foundation for Innovation/Ontario Research Fund project for the construction of a digital media and systems lab. He has been selected to serve as the next Scientific Director of the Graphics, Animation and New Media Network of Centres of Excellence (GRAND), beginning in 2015. He has the distinction of having been (co-)supervised by three previous CHCCS/SCDHM Achievement Award winners: Kellogg Booth (bachelor's paper), Bill Buxton (master's thesis), and Alain Fournier (doctoral dissertation).

Graphics Keynote Speaker

Physics in Games

Matthias Müller
NVIDIA, Switzerland

Abstract

Physical simulations have a long history in engineering and have been successfully used to complement real world experiments. Main advantages computer simulations have over real experiments are the ability to study extreme conditions and the analysis of very small time intervals. With this in mind, the accuracy of the models and the results are central to engineering applications.

For more than three decades, physical simulations have also been used in computer graphics in order to increase the realism of animations and to free artists from animating secondary motion by hand. The two main applications are special effects in movies and physical effects in computer games. Here, accuracy is important to the extent that plausible behavior is generated. There are, however, additional requirements not present in the engineering world that are more important than accuracy. One such requirement is controllability: movie directors and game developers want to be able to control how a building collapses or what path a flood wave takes in order to create the desired effect or to make sure game play does not get blocked. Another aspect that plays a major role, especially in games, is stability. The simulations need to be unconditionally stable even in unphysical situations such as characters turning 180 degrees in a single time step.

These new requirements are the reason why physically based simulation in computer graphics has become an important research field separate from scientific computing. In my talk I will present a variety of simulation methods we have developed to meet these requirements, while still producing plausible physical behavior. Examples are approaches to simulate soft bodies, clothing, destruction and liquids.

Biography

Dr. Matthias Müller is Research Lead of the PhysX SDK team at NVIDIA. PhysX is a GPU accelerated physically based simulation engine for computer games. His research interests include the development of methods for the simulation of rigid bodies, fracture, soft bodies, cloth and fluids that are fast, controllable and robust enough to be used in game environments. He is a pioneer in the field of position based dynamics and has been contributing to this and other fields via numerous publications in the major computer graphics conferences and journals. Position based dynamics has become the standard for the simulation of soft bodies and cloth in computer games and has been adopted by the film industry as well.

Matthias Müller received his Ph.D. from ETH Zürich for his work on the atomistic simulation of dense polymer systems. During a two year post-doc with the computer graphics group at MIT he changed his research focus from atomistic offline simulations to macroscopic real time simulation in computer graphics. In 2002 he co-founded Novodex, a company that developed a simulation engine for computer games. In 2004 Novodex was acquired by AGEIA which, in turn, was acquired by NVIDIA in 2008.

For more information, please visit: http://www.matthiasmueller.info

HCI Keynote Speaker

Foundations for Designing User Centered Systems: A framework and some case studies

Elizabeth Churchill
eBay Research Labs, USA

Abstract

Interactive technologies pervade every aspect of modern life. Web sites, mobile devices, household gadgets, automotive controls, aircraft flight decks; everywhere you look, people are interacting with technologies. These interactions are governed by a combination of: the users' capabilities, capacities, proclivities and predilections; what the user(s) hope to do and/or are trying to do; and the context in which the activities are taking place. From concept to ideation to prototype and evaluation, when designing interactive technologies and systems for use by people, it is critical that we start with some understanding of who the users will be, what tasks and experiences are we are designing to support; and something about the context(s) of use. In this talk, I will discuss a framework for thinking about design, the ABCS. Using examples from my own work, I will illustrate how this framework has been explicitly and/or tacitly applied in the design, development and evaluation of interactive, multimedia systems.

Biography

Dr. Elizabeth Churchill is an applied social scientist working in the area of social media, interaction design and mobile/ubiquitous computing. She is currently Director of Human Computer Interaction at eBay Research Labs (ERL) in San Jose, California. She was formerly a Principal Research Scientist at Yahoo! Research, where she founded, staffed and managed the Internet Experiences Group. Originally a psychologist by training, throughout her career Elizabeth has focused on understanding people's social and collaborative interactions in their everyday digital and physical contexts. She has studied, designed and collaborated in creating online collaboration tools (e.g. virtual worlds, collaboration/chat spaces), applications and services for mobile and personal devices, and media installations in public spaces for distributed collaboration and communication.

Elizabeth has a B.Sc. in Experimental Psychology, an M.Sc. in Knowledge Based Systems, both from the University of Sussex, and a Ph.D. in Cognitive Science from the University of Cambridge. In 2010, she was recognised as a Distinguished Scientist by the Association for Computing Machinery (ACM). Elizabeth is the current Executive Vice President of ACM SigCHI (Human Computer Interaction Special Interest Group). She is a Distinguished Visiting Scholar at Stanford University's Media X, the industry affiliate program to Stanford's H-STAR Institute.

For more information, please visit: http://elizabethchurchill.com