193

9

1

155

41

131

131

227

{
    RCP<const FCurveUniformSamples> curve(FCurveUniformSamplesVM::toConst(state, 1));
    RCP<FCurveUniformSamples> result;
    curve->resampleLinear(result, VM::toInt(state, 2));
    FCurveUniformSamplesVM::push(state, result);
    return 1;
}
int
waveletTransformFwdHaarVM
(VMState* state)
{
    RCP<const FCurveUniformSamples> curve(FCurveUniformSamplesVM::toConst(state, 1));
    RCP<FCurveUniformSamples> result;
    curve->waveletTransformFwdHaar(result);
    FCurveUniformSamplesVM::push(state, result);
    return 1;
}
int
waveletTransformRevHaarVM
(VMState* state)
{
    RCP<const FCurveUniformSamples> curve(FCurveUniformSamplesVM::toConst(state, 1));
    RCP<FCurveUniformSamples> result;
    curve->waveletTransformRevHaar(result);
    FCurveUniformSamplesVM::push(state, result);
    return 1;
}
int
waveletTransformPartialRevHaarVM
(VMState* state)
{
    RCP<const FCurveUniformSamples> curve(FCurveUniformSamplesVM::toConst(state, 1));
    RCP<FCurveUniformSamples> result;
    curve->waveletTransformPartialRevHaar(result, VM::toInt(state, 2));
    FCurveUniformSamplesVM::push(state, result);
    return 1;
}
int
waveletTransformFwdLinearVM
(VMState* state)
{
    RCP<const FCurveUniformSamples> curve(FCurveUniformSamplesVM::toConst(state, 1));
    RCP<FCurveUniformSamples> result;
    curve->waveletTransformFwdLinear(result);
    FCurveUniformSamplesVM::push(state, result);
    return 1;
}
int
waveletTransformRevLinearVM
(VMState* state)
{
    RCP<const FCurveUniformSamples> curve(FCurveUniformSamplesVM::toConst(state, 1));
    RCP<FCurveUniformSamples> result;
    curve->waveletTransformRevLinear(result);
    FCurveUniformSamplesVM::push(state, result);
    return 1;
int
waveletTransformPartialRevLinearVM
(VMState* state)
{
    RCP<const FCurveUniformSamples> curve(FCurveUniformSamplesVM::toConst(state, 1));
    RCP<FCurveUniformSamples> result;
    curve->waveletTransformPartialRevLinear(result, VM::toInt(state, 2))
    FCurveUniformSamplesVM::push(state, result);
    return 1;
}
int
waveletTransformFwdCubicVM

Proceedings

Graphics
Interface 2008

28 - 30 May 2008
Windsor, Ontario, Canada

Canadian Human-Computer
Communications Society/
Société Canadienne du
Dialogue Humaine Machine
(CHCCS/SCDHM)

VMState* state)
{
    RCP<const FCurveUniformSamples> curve(FCurveUniformSamplesVM::toConst(state, 1));
    RCP<FCurveUniformSamples> result;
    curve->waveletTransformFwdCubic(result);
    FCurveUniformSamplesVM::push(state, result);
    return 1;
}
int
waveletTransformRevCubicVM
(VMState* state)
{
    RCP<const FCurveUniformSamples> curve(FCurveUniformSamplesVM::toConst(state, 1))
    RCP<FCurveUniformSamples> result;
    curve->waveletTransformRevCubic(result)
    FCurveUniformSamplesVM::push(state, result)
    return 1;
}

IEEE
vgtc

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Left to right (starting on back left):

SurfaceFusion presents a set of techniques in which movement and shape from the computer vision system is fused with RFID events that identify objects on the surface. This allows users to intuitively and seamlessly interact with physical objects and their associated digital information.
Alex Olwal, Andrew D. Wilson (235)

The schematic of the cochlea highlights the spatial layout of hair cells along the basilar membrane [Student.britannica.com, 2008]. This serves as the metaphor for designing the Model Human Cochlea; a sensory substitution technique that translates audio signals from music into vibrotactile stimuli along the body.
Maria Karam, Frank Russo, Carmen Branje, Emily Price, Deborah I. Fels (267)

Interactive 3D Facial Expression Posing through 2D Portrait Manipulation (University of Houston, University of Southern California).
Tanasai Sucontphunt, Zhenyao Mo, Ulrich Neumann, Zhigang Deng (177)

While conventional clipping would lead to a hard cut through the ribs, smooth clipping preserves anatomical context by reducing the opacity of the ribs which are not occluding important parts of the aorta.
Peter Kohlmann, Stefan Bruckner, Armin Kanitsar, M. Eduard Gröller (81)

A backyard scene rendered with a 2k×2k shadow map and 5×5 Gauss filtering using ESMs (94 FPS, 21 MB).
Thomas Annen, Tom Mertens, Hans-Peter Seidel, Eddy Flerackers, Jan Kautz (155)

A simple real-time application showing Happy Buddha with emphasis on texturing operations for timing.
Francesco Banterle, Kurt Debattista, Patrick Ledda, Alan Chalmers (41)

The Adjusted Ink technique for visualizing mathematical expression recognition and parse results. It rewrites the symbols using an ink font and draws symbols in different colors to show parsing information.
Joseph J. LaViola Jr., Anamary Leal, Timothy S. Miller, Robert C. Zeleznik (131)

Top to bottom on front:

Sphere with an eight-lobed displacement map.
Elodie Fourquet, William Cowan, Stephen Mann (193)

Participant wearing blinders with a 100 megapixel display to understand the effects of physical navigation and peripheral vision.
Robert Ball, Chris North (9)

Arm embodiments for multi-user tabletop systems.
David Pinelle, Miguel Nacenta, Carl Gutwin, Tadeusz Stach (1)

Below joint:

Representative keyframes of the unfolding animation created by proposed method for an Asiatic lily.
Takashi Ijiri, Mihoshi Yokoo, Saneyuki Kawabata, Takeo Igarashi (227)

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Graphics **Interface** 2008

Windsor, Ontario, Canada
May 28 - 30, 2008

Proceedings

Edited by

Lyn Bartram

Chris Shaw

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President's Welcoming Letter

**Canadian Human Computer Communications Society /
Société Canadienne du Dialogue Humaine Machine**

Bill Cowan

David R. Cheriton School
of Computer Science
University of Waterloo

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

Each year CHCCS/SCDHM sponsors Graphics Interface, the oldest regularly scheduled conference in interactive computer graphics. Most years it is co-located and co-organized with several other conferences: this year the AI/CRV/GI/IS 2008 conference, encompassing Artificial Intelligence, Computer and Robotic Vision and Intelligent Systems, along with Graphics Interface, is being held at the University of Windsor in Windsor, Ontario. Graphics Interface promises to be an exciting event, with a selection of high quality papers in computer graphics, visualization and human-computer interaction.

Complementing the annual conference CHCCS/SCDHM sponsors four awards: the annual Michael A. J. Sweeney Awards for the best student papers presented at the conference; the annual Alain Fournier Ph.D. Thesis Award, presented for the best Ph.D. thesis awarded in Canada during the previous year in an area of research supported by CHCCS/SCDH; the annual CHCCS/SCDH Achievement Award, presented to a Canadian who has made substantial research contributions to computer graphics, visualization or human-computer interaction; and the CHCCS/SCDH Service Award, presented to a Canadian who has rendered substantial service contributions to the society or 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. At this year's conference we will provide an Achievement Award to Kellogg S. Booth, long-time president of CHCCS/SCDHM, and a Service Award to James Stewart. I wish to thank the Awards committee, which consists of

Richard Bartels, University of Waterloo (emeritus), Chair,

Bill Buxton, Microsoft, and

Kory Inkpen, Dalhousie University,

for their efforts in finding two well-deserving recipients.

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

Bill Cowan, University of Waterloo, President,

Kellogg S. Booth, The University of British Columbia, Past President,

Pierre Poulin, Université de Montréal, Vice President,

Stephen Mann, University of Waterloo, Treasurer,

Ted Kirkpatrick, Simon Fraser University, Editor-in-Chief, and

James Stewart, Queen's University, Webmaster.

All Graphics Interface attendees are invited to attend the General Meeting, or to contact any member of the executive committee about CHCCS/SCDHM.

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/IS 2008. I also wish to thank Lyn Bartram and Chris Shaw, the cochairs of the program committee, along with the committee members and referees who created 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 Cochairs

Chris Shaw
School of Interactive
Arts & Technology
Simon Fraser University, Canada

Lyn Bartram
School of Interactive
Arts & Technology
Simon Fraser University, Canada

Welcome to Graphics Interface 2008. This annual conference, now in its 34th year, is devoted to computer graphics, interactive systems, and human-computer interaction. Graphics Interface occupies a unique niche among conferences in that it seeks to both combine and bridge research topics in and across these areas. Beginning in 1969 as the "Canadian Man-Computer Communications Seminar" (CMCCS), it is the oldest regularly scheduled computer graphics and human-computer interaction conference. This year, Graphics Interface was held May 28-30, 2008 in Windsor, Ontario.

We received a total of 85 submissions, of which 34 papers were accepted. The final program is balanced between HCI and computer graphics, with both tracks seeing similar acceptance rates: 41% for the HCI track, and 39% for the graphics track.

Twenty international experts served on the program committee, solicited and managed reviews from a wide body of other experts and helped to select a very high quality set of papers for this year's conference. The great majority of papers received four reviews, two of which were from program committee members. We particularly thank the program committee for their expertise and effort in ensuring both high standards and interesting breadth in this year's technical program. We also thank the many external reviewers for their help in this endeavour.

We would also like to extend our appreciation to this year's invited speakers, who are both outstanding leaders in their respective fields: David S. Ebert, Purdue University, and Patricia M. Jones, NASA Ames Research Center.

Lastly, we wish to thank several people whose efforts were indispensable in making Graphics Interface 2008 happen: William Cowan, Kellogg S. Booth, Pierre Poulin, James Stewart, Torsten Möller, Arthur Kirkpatrick, and Meghan Haley.

For further information about the conference series we invite you to visit the web site, http://www.graphicsinterface.org.

Organization

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Graphics Cochair
Simon Fraser University, Canada

Lyn Bartram
HCI Cochair
Simon Fraser University, Canada

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Stevens Institute of Technology,
USA

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Radical Entertainment, Canada

Abhijeet Ghosh
Unversity of Southern California,
USA

Amy Gooch
University of Victoria, Canada

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Chadwick Wingrave
Peter Wonka
Chris Wyman
Pengcheng (Perry) Xi
Nick Yee
Sung-Eui Yoon
Xiaoru Yuan
Gabriel Zachmann
Shumin Zhai
Haitao Zhang
Eugene Zhang
Hongxin Zhang

Michael A. J. Sweeney Award 2008

**Canadian Human Computer Communications Society /
Société Canadienne du Dialogue Humaine Machine**

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

Best Student Paper 2008

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

Graphic 2008 Award Winner

"Surface-based Growth Simulation for Opening Flowers" by Takashi Ijiri, Mihoshi Yokoo, Saneyuki Kawabata and Takeo Igarashi.

Biographies

Takashi Ijiri is a Ph.D candidate at the department of computer science, the University of Tokyo, Japan. His research interest is interaction technique for 3D graphics in general and current focus is 3D modeling and simulation of plants.

Mihoshi Yokoo received her Master degree at the department of agricultural and environmental biology, the University of Tokyo, Japan, and is currently a researcher of Shiseido Co., Ltd.

Saneyuki Kawabata is an associate professor at the department of agricultural and environmental biology, the University of Tokyo, Japan. He received his Ph.D in Agriculture in March 1991 from the University of Tokyo. His research interest is in organ morphogenesis and development in horticultural crops including vegetables and ornamentals.

Takeo Igarashi is an Associate Professor of Computer Science at the University of Tokyo, Japan. He earned his Ph.D. in information engineering at the University of Tokyo in 2000. He is interested in user interfaces in general and current focus is on interaction techniques for 3D graphics. He has received several professional awards, including ACM SIGGRAPH significant new researcher award.

HCI 2008 Award Winner

"An Empirical Characterisation of Electronic Document Navigation" by Jason Alexander and Andy Cockburn.

Biographies

Jason Alexander is a final year Ph.D. student in the Human-Computer Interaction and Multimedia lab at the University of Canterbury, Christchurch, New Zealand. His thesis is entitled "Understanding and Improving Electronic Document Navigation" and focuses on navigation within documents in desktop applications.

Andy Cockburn is a Computer Scientist with an interest in modelling and empirically measuring human performance with interactive systems; he is an Associate Professor in the Department of Computer Science of the University of Canterbury, Christchurch, New Zealand.

Alain Fournier Award 2007

Canadian Human Computer Communications Society /
Société Canadienne du Dialogue Humaine 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. thesis defended in a Canadian University over the past year. The winning thesis 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.

Abhijeet Ghosh

The University of British Columbia, Canada

CHCCS/SCDHM Alain Fournier Award Recipient 2007

This year, Abhijeet Ghosh is the recipient of the "Alain Fournier Ph.D. Thesis Award". His thesis, entitled Realistic Materials and Illumination Environments, made several outstanding research contributions to computer graphics. His novel optical setup for measuring surface reflectance without moving parts, while optically filtering them into basis functions, won the honourable mention for the prestigious Marr Prize at the International Conference on Computer Vision in 2007. Amongst other significant contributions in the dissertation, Abhijeet introduced sampling techniques for direct illumination and environment maps that drastically improve convergence rates, he adapted image processing algorithms for high dynamic range displays, and he demonstrated how active control of room illumination based on dynamic scene content can increase the sense of presence and immersion in a virtual environment.

Abhijeet completed his B.E. in computer science and engineering at Gujarat University in India, his M.S. in computer science at Stony Brook University under the supervision of Dr. Arie Kaufman, and his Ph.D. in computer science at The University of British Columbia under the supervision of Dr. Wolfgang Heidrich. As a graduate student, Abhijeet has been a leader involved with various departmental and laboratory committees, and has already served on three program committees of international conferences. Abhijeet has now joined the graphics laboratory of Paul Debevec at the University of Southern California's Institute for Creative Technologies.

For more information, please visit: https://www.cs.ubc.ca/~ghosh/

Achievement Award 2008

**Canadian Human Computer Communications Society /
Société Canadienne du Dialogue Humaine 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 2008 members of the Awards Committee are Richard Bartels, William Buxton, and Kori Inkpen.

Kellogg S. Booth

The University of British Columbia,
Canada

CHCCS/SCDHM Achievement
Award Recipient 2008

Professor Booth is receiving the CHCCS/SCDHM Achievement Award for his long-term contributions to the development of computer graphics, visualisation, and human-computer interaction in Canada. Booth has championed interdisciplinary activities between computer graphics and other areas of research, and he has encouraged cooperation, collegiality and communication among computer graphics researchers and students across Canada. Professor Booth has provided over three decades of thoughtful, dedicated, selfless leadership and service to the HCI and computer graphics community. This is particularly evident in his inspired leadership role in institutions and organizations that have played an instrumental role in shaping the landscape of Canadian computer graphics and HCI research. His scholarly activity demonstrates an exceptional committment to interdisciplinary research. Professor Booth's research interests are broad. He is one of the few people who has published in at least three different fields, namely theory, graphics, and HCI.

Kellogg Booth holds a professorship at The University of British Columbia, to which he came after serving on the faculty of the University of Waterloo from 1977 through 1990. Along with John Beatty, he was responsible for establishing one of Canada's preeminent Computer Graphics Laboratories at the University of Waterloo, as well as the Department of Computer Science's computer graphics curriculum. At The University of British Columbia he helped establish the Imager Laboratory for Graphics, Visualization and HCI at UBC with Alain Fournier and others, a group which has since grown to encompass 10+ faculty. He served from 1990 through 2002 as the founding director of MAGIC, the Media and Graphics Interdisciplinary Centre, beginning his role as a pioneer in HCI in Canada, a stalwart promotor of interdisciplinary research, and a mentor to many large-scale HCI projects spanning disciplines and universities. Professor Booth also participated in the successful multi-million dollar CFI proposal to build the new lab space for ICICS, the Institute for Computing, Information and Cognitive Systems. This is UBC's premier interdisciplinary research institute in computing, fostering

a human-centred approach to emerging information technologies. More recently, from 2004 until 2008, Professor Booth has been the Associate Director, and Acting Director in the first half of 2006, of NECTAR, the Network for Effective Collaboration Technologies through Advanced Research, a Canadian-wide NSERC strategic research network focused on collaboration technologies.

Professor Booth co-chaired the 1983 SIGGRAPH Conference. He has served as the SIGGRAPH Chair and has been involved in this organization since the late 1970's. Moreover, Professor Booth has almost single-handedly been the key organizational force behind the Graphics Interface conferences in recent years. This has played a large role in promoting the international image for Canada in the areas of HCI and computer graphics. Since 2002, he has served as president of the Canadian Human-Computer Communications Society, the umbrella organization for the annual Graphics Interface conference. He was local arrangements co-chair for the CHCCS conference in 1981, general co-chair of AI/GI/VI in 1992, and general chair of AI/GI/CRV in 2005.

Professor Booth received a B.Sc. in Mathematics from the California Institute of Technology in 1968 and an M.A. and Ph.D. in Computer Science from the University of California at Berkeley in 1970 and 1975, respectively. During his studies, and before entering Canada to take his position at Waterloo, Professor Booth was a staff member at Lawrence Livermore National Laboratory from 1968 to 1976, where he had some of his early exposure to computer graphics.

Professor Booth's Ph.D. work and early research were in the theoretical areas of computational complexity and graph theory, but at Waterloo he began to focus his interests on graphics rendering and the hardware and software needed for their support. To this gradually became

added issues of human-computer interaction and the visual aspects of human interfaces. He has completed over 90 refereed publications, has written over 40 other technical works, and edited two tutorial books of collected articles. He has mentored 16 Ph.D. candidates to the completion of their degrees and supervised over 50 successful Master's students.

This outline and these numbers do not do justice to the multidisciplinary nature of Professor Booth's research. A notable project undertaken during the 1980's with Rhonda Ryman and John Beatty developed an intelligent editor for Benesh Movement Notation, widely used by choreologists even today and maintained by the Royal Academy of Dance. During the 1980's as well, Professor Booth published a number of early studies on the efficacy of using multitasking and multiprocess hardware and software support for interactive programs, notably the Benesh editor and paint programs. He worked on the leading edge of exploring what hardware would most effectively support graphics rendering, and he helped pioneer the application of controlled experimental design and experimental test-beds from psychology to the study of visual and behavioral aspects of human-computer interaction. These tools were used to investigate such issues as menu layout and placement, the value of anti-aliasing in displays, and comparative approaches to 3D design manipulation via 2D displays. During the 1990's his interests broadened to include studies in collaborative activities on computers. Publications from this time include topics in virtual and augmented reality, group collaboration at a distance, and device and display issues for cooperative interaction.

Professor Booth's research continues in the 2000's along these paths. He is one of the leaders in the testing, assessing, and evaluation of human-computer interaction techniques. Together with his students, he has tackled a broad range of topics in HCI, collaborative technologies, and related areas. Examples of his more recent research include:

- designing affect into physical user interfaces
- input control in large-display and multi-display environments
- privacy-ware for multi-display environments
- structured annotations to support collaborative writing
- tools to support project memory in software development
- personalized user interfaces for heavily-featured software applications
- shared input control for children in an educational setting

Altogether, his work has significantly helped to promote the international image of Canada as a hotbed of HCI. It is also fair to say that the position of both the University of Waterloo and The University of British Columbia in Canadian computer graphics is owed significantly to Professor Booth's efforts and presence at these institutions. More broadly, Professor Booth has been the natural person to turn to for many in the community. Whenever an astute, considered opinion is required with regard to establishing and funding large-scale research projects, he has long been a source of wisdom and good judgement.

For more information, please visit: http://www.cs.ubc.ca/~ksbooth/

Service Award 2008

**Canadian Human Computer Communications Society /
Société Canadienne du Dialogue Humaine Machine**

The CHCCS/SCDHM Service Award is presented from time to time to a Canadian who has made a substantial service contribution to the organization.

James Stewart

School of Computing,
Queen's University, Canada

CHCCS/SCDHM Service Award
Recipient 2008

Dr. James Stewart has, for many years, supported the Graphics Interface conference submissions and reviewing process through the development of a web-based system that has proven to be an outstanding contribution to the conference and the community at large. Initially set up only for the annual Graphics Interface conference using a computer funded by CHCCS/SCDHM, the system evolved over the years to become a successful commercial product that is now used by many conferences, including Graphics Interface, to administer the submission and review process for papers and other contributions to conference technical programs.

The Graphics Interface conference has always strived to maintain a high standard for its reviewing process. Over the years, more than one author has commented on the exceptional quality of the reviews that were received. The quality of the reviewing is reflected in the quality of the final program. There is little doubt that the availability of the submission and reviewing software developed by James Stewart has contributed significantly to the quality of the reviewing by providing an easy-to-use mechanism for coordinating the efforts of the many volunteers who participate in the reviewing process.

The system streamlines each step of the submission and review process so that the program chairs are able to better manage the process and coordinate the volunteer reviewers. The existence of a well designed and easy-to-use web-based system allows participation in the reviewing process by a broad cross section of the research community, experts who donate their time to read and evaluate submissions. This has been a key factor in maintaining a strong technical program for the annual Graphics Interface conference, which has gained an international reputation as a high-quality publication venue for leading-edge research in computer graphics, visualization, and human-computer interaction.

The commercial system developed by James's company, Precision Conference Solutions, is now used by many of the major international conferences in computer graphics, vis-ualization, human-computer interaction, and related areas including augmented and virtual reality, wearable computing, and cognitive science. The widespread recognition of the usefulness and the usability of the system is a testament to the user-centered approach embodied in the design of the system, which allows individivual conferences to customize the system to support specific workflows.

James served as program co-chair for the Graphics Interface '99 conference, and he has been a reviewer or member of the local organizing committee for various conferences. He has served as the web master for www.graphicsinterface.org since its inception.

Dr. Stewart earned his B.Sc. at Queen's University. He earned his Ph.D. from Cornell University in 1992 and was subsequently on the Computer Science faculty of the University of Toronto from 1992 until 2001. Since then he has been on the faculty of Queen's University, where he is an Associate Professor in the School of Computing. His research interests are centered primarily on questions involving issues of visibility, processing, rendering, and modelling with collections of polygons and general polygonal meshes. An area of application for these techniques, on which he has concentrated some of his recent efforts, is medical and surgical planning and support.

For more information, please visit: http://www.cs.queensu.ca/~jstewart/

Invited Talk 2008

Mobiquitous Graphics and Visualization: More Than Just Fun and Games?

David Ebert

Purdue University, USA

Abstract

With the mobile and ubiquitous revolution of computerized applications, what role and challenges are created for graphics and visualization? Some of the earliest and most popular mobiquitous graphics applications have been mobile games and maps. In this talk, I'll describe some opportunities for creating integral and essential applications for graphics and visualization in mobile and ubiquitous environments, including guidance for emergency responders, maintenance and repair personnel, and diners in restaurants. I'll also address challenges and trends that go beyond just traditional graphics and incorporate broader computer science issues. Creating useful, effective applications for these environments requires not only developing novel, adapted rendering techniques, but also power- and network-aware techniques. Moreover, the users, their tasks, their device characteristics, and their environment must be considered to create usable applications that can harness the full power of computerized mobiquity.

Biography

David Ebert is a Professor in the School of Electrical and Computer Engineering at Purdue University, a University Faculty Scholar, Director of the Purdue University Rendering and Perceptualization Lab (PURPL), and Director of the Purdue University Regional Visualization and Analytics Center (PURVAC), which is part of the Department of Homeland Security's Regional Visualization and Analytics Center of Excellence. Dr. Ebert performs research in novel visualization techniques, computer graphics, visual analytics, volume rendering, information visualization, perceptually-based visualization, illustrative visualization, and procedural abstraction of complex, massive data. Ebert has been very active in the graphics and visualization community, teaching courses, presenting papers, co-chairing many conference program committees, serving on the ACM SIGGRAPH Executive Committee, serving as Editor in Chief of IEEE Transactions on Visualization and Computer Graphics, serving as a member of the IEEE Computer Society's Publications Board, serving on the National Visualization and Analytics Center's National Research Agenda Panel, and successfully managing large projects to develop more effective methods for visually communicating information.
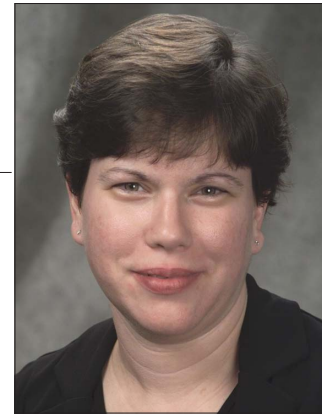
For more information, please visit: http://cobweb.ecn.purdue.edu/~ebertd/

Keynote Address

Looking Across NASA: A Perspective

Dr. Patricia M. Jones

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Abstract

The United States National Aeronautics and Space Administration (NASA) depends on advanced information technology to accomplish its missions of exploration, science, and aeronautics research. In the context of selected examples from NASA visualization and human-computer interactive systems, we examine assumptions about meaning, collaboration, media richness, and media fluency.

Biography

Dr. Patricia M. Jones is currently the acting Chief of the Human Systems Integration Division at NASA Ames Research Center, Moffett Field California, where she leads 100 researchers working on a wide range of human factors issues, from flight deck automation, human factors requirements for space flight, and aviation safety systems to basic research on perceptual and cognitive mechanisms of human performace. She has been at NASA Ames since 2001 when she was the Deputy Division Chief. Previously, she was Associate Professor of Industrial Engineering and Aviation at the University of Illinois at Urbana-Champaign. She has published over 60 technical papers in human-automation interaction and cooperative systems. She received the B.S. degree in psychology from the University of Illinois at Urbana-Champaign in 1986 and the M. S. and PhD degrees in industrial and systems engineering from the Georgia Institute of Technology in 1988 and 1991. She is a senior member of IEEE and a member of HFES and ACM.

For more information, please visit: http://human-factors.arc.nasa.gov/organization/personnel_view.php?personnel_id=5