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Preface

I have often been asked for suggestions on how to manage one’s time at SIGGRAPH, given that there are always so many things going on at once. My answer is always the same. I prefer to immerse myself in as many technical papers sessions as possible so that I can hear about all of the wonderful new research directly from the authors. Of course you can read papers before or after the conference, but I almost always find that the best introduction to the ideas is the author’s own words and images from their talks. Part of what makes the SIGGRAPH conference so special is the care that the authors put into their presentations, making the talks a joy to attend. This year the papers program is filled with exciting papers that span the entire range of topics in graphics. I hope that you will take the opportunity to attend many of the talks so that you can enjoy these new research contributions more fully.

There were 518 papers submitted to the ACM SIGGRAPH 2008 Technical Papers Program, and 90 of these papers were accepted to the conference. These paper counts have more meaning when compared to previous conferences, and I refer you to the table and graph at the end of this preface to see the submission and acceptance rates for earlier SIGGRAPH conferences. What you will find is that the number of submissions this year took a big jump from previous years, but that the acceptance rate is in line with previous years.

The biggest change to the technical papers program this year is the introduction of TOG presentations to SIGGRAPH. Every author of a paper appearing this year in the ACM Transactions on Graphics (TOG) has the opportunity to give a full presentation of their work in a SIGGRAPH technical papers session. As I write this, the October 2008 issue of TOG has yet to be compiled, so we do not know the exact number of TOG presentations that will be at the conference. Our best guess is that roughly 30 such TOG presentations will be given, spread over seven or eight different papers sessions. This important change to the conference was the result of long deliberations by a working group that was led by Rob Cook, and that also included Adam Finkelstein, John Hart, Jessica Hodgins, Holly Rushmeier and myself.

In addition to TOG presentations at SIGGRAPH, there is another way that TOG and SIGGRAPH are tied together. For several years now, in addition to the choices of “accept” or “reject”, there has been a third option in the review process for papers submitted to SIGGRAPH. If the reviewers think that the content of a paper is SIGGRAPH quality, but that the paper needs more revisions than time permits in the conference review cycle, such a paper can be designated as “reject and refer to TOG.” Then, if the authors wish, their paper can be brought into the TOG review process, carrying with it the SIGGRAPH reviews and the ongoing input from the SIGGRAPH papers committee members that made the referral. This year, 24 papers were referred to TOG in this manner.

One of the most important responsibilities of the SIGGRAPH papers chair is to seek out ways in which the papers review process can be improved. The SIGGRAPH review process is considered by many to be a model of fairness and care. I have talked to papers chairs from other computer science conferences that have deliberately borrowed ideas from the SIGGRAPH review process to improve their own conference. One of the most frequent comments that I hear from first-time papers committee members is how much better they feel about the review process once they have seen what the face-to-face papers committee meeting is like. As good as the review process is, however, there is always room for improvements. A concern that is sometimes voiced is that papers committee members have too much control over the decision-making process for papers, in contrast to the tertiary reviewers who do not attend the PC meeting. To help address this issue, all tertiary reviewers this year were able to post to the public bulletin-board during the rebuttal phase of reviews. In addition, I asked all of the reviewers (including tertaries) to try to reach a reviewer consensus for each paper prior to the papers committee meeting, via discussions on the private bulletin-boards. I view this as the logical progression that has been taking place over the last several years of including tertiary reviewers more in the decision process.

I wish to thank the following people for helping make the technical papers program for SIGGRAPH 2008 a success:

- Marc Levoy, SIGGRAPH 2007 Papers Chair, for setting a great example as chair and for showing me the ropes.
- Jacquelyn Martino, SIGGRAPH 2008 General Chair, for trusting me with this task and for helping with the tough issues.
- Adam Finkelstein, Research Director for SIGGRAPH 2008, for being my partner on so many of the tasks for the papers program.
- Francesca Regan of Talley Management for holding the entire review process together.
- Laurie Schall, Angela Anderson and Bob Niehaus, also from Talley Management, for all of their support.
- Jason Fondran, Dmitri Zaguidin and the rest of the OPAL development team for putting together the new review system and for trouble-shooting throughout the review process.
- Janet McAndless for advice all through the process.
• My advisory board, Adam Finkelstein, Jessica Hodgins, Markus Gross and Tom Funkhouser (SIGGRAPH 2009 Papers Chair), for always giving me excellent advice on the hard questions.

• The eight Area Coordinators for the review process: Julie Dorsey, Frédo Durand, Tom Funkhouser, Wolfgang Heidrich, Jessica Hodgins, Hugues Hoppe, Jos Stam and Rick Szeliski.

• The 62 members of the Papers Committee, who all did a tremendous amount of work to make sure each paper was reviewed with care.

• All of the other reviewers who took the time to give thoughtful paper reviews.

• John Hart, Editor in Chief of TOG, for helping make TOG papers at SIGGRAPH a reality.

• Stephen Spencer, chair of the ACM SIGGRAPH Publications Committee, for putting together the beautiful proceedings that you are reading.

• Jim Blinn, Michael Cohen, David Theil and Rick Szeliski for putting together the Papers Preview video.

• Leona Caffey from Smith-Bucklin for putting together the schedule, the advance program and other material for the technical program, and Tom Rieke from Q Ltd for managing the web pages for the program.

• My colleagues, students and staff at Georgia Tech who helped support the PC meeting.

• Microsoft Research and Disney for providing financial support for the papers committee meeting.
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</tr>
<tr>
<td>1991</td>
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<tr>
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<td>213</td>
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<td>56</td>
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<td>1996</td>
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<tr>
<td>2005</td>
<td>461</td>
<td>98</td>
<td>21.3</td>
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<td>474</td>
<td>86</td>
<td>18.1</td>
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<td>2007</td>
<td>455</td>
<td>108</td>
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<tr>
<td>2008</td>
<td>518</td>
<td>90</td>
<td>17.4</td>
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</table>

As you can see from the graph, the trend over the years has been towards more paper submissions. Clearly this is the sign of a healthy conference. However, we should all be considering what this growth means to the papers review process.

The job of Technical Papers Chair for SIGGRAPH 2009 is in the capable hands of Tom Funkhouser. I trust that each of you will do your best to help him make next year’s papers program a success.

Greg Turk
SIGGRAPH 2008 Technical Papers Chair
Editorial: The Year in TOG

I usually devote the SIGGRAPH issue TOG editorial to advertise the papers in the past three TOG issues, but since they have now been included into the SIGGRAPH technical program in TOG paper presentation sessions, I won’t need to do that this time. If all goes smoothly according to ACM policy, this is my last SIGGRAPH as the TOG Editor-in-Chief, so I’d rather to take this opportunity to thank some people for their help in preserving and promoting TOG’s distinction as the top journal in computer graphics.

I received TOG in excellent shape six years ago from Jessica Hodgins, publishing on time with no backlog. My mission then was to inform authors that TOG wanted to publish their high quality research papers as rapidly as possible, so we strived to make decisions within four months of submission. ScholarOne’s ManuscriptCentral online system helps us process these submissions efficiently (though with the challenges common to so many online interfaces), and we are all very fortunate to have former TOG EiC Holly Rushmeier looking out for our interests on the ACM pubs board. We’ve all relied heavily on TOG assistants Andrea Whitesell and recently Donna Coleman to keep things moving smoothly. Thanks also to the authors for submitting many excellent manuscripts, to the TOG associate editors and reviewers for evaluating submissions accurately and quickly, and to Eric Haines for maintaining TOG’s online lists of graphics resources.

The SIGGRAPH Annual Conference Proceedings that contains this editorial is the premiere publication venue in computer graphics due to the hard work of many researchers, reviewers, editors and organizers, but there is also a dark side to this success. As is true of every conference or journal, the SIGGRAPH conference papers selection process is imperfect. But the high-visibility stature of the SIGGRAPH Annual Proceedings has overshadowed alternatives like TOG and other strong publications in our field. This has lead to an unhealthy one-shot-a-year SIGGRAPH-or-bust mentality in the research community that has delayed the publication of new ideas. This problem became very public in 2006, and Marc Levoy convened a SIGGRAPH 2006 town hall meeting to discuss the problem. As TOG EiC I have worked towards improving this situation by emphasizing the year-round TOG referee process as a saner alternative to the once-a-year SIGGRAPH review cycle, but achieving this goal has relied on the hard work of many others and the gracious support and flexibility of the SIGGRAPH organization.

Jessica Hodgins, John Hughes (SIGGRAPH 2002 Papers Chair) and Stephen Spencer (SIGGRAPH Director for Publications) began this process by negotiating a cooperative agreement that laid the foundation for what has been a growing and synergistic conference-journal relationship that improved SIGGRAPH’s citations and TOG’s exposure by publishing the SIGGRAPH Annual Conference Proceedings as an issue of TOG, and served as a successful example followed by several other graphics conferences and journals. We also modified TOG’s form factor and format to better match those of the SIGGRAPH proceedings.

Starting in SIGGRAPH 2004 and with the cooperation of its papers chair Joe Marks, we amended this agreement to allow the papers committee to recommend some papers be accepted with major revisions for publication in a subsequent issue of TOG. These were papers that needed more than one month’s work to fix, but once fixed would certainly be accepted by next year’s papers committee at the expense of more than a year’s delay. Since then, TOG’s papers have been a mix of those refereed through the journal process and those shepherded through the conference process. Thanks also to Markus Gross, Julie Dorsey, Marc Levoy and Greg Turk, and coordinators Janet McAndless and Francesca Regan, for making this happen in subsequent years.

Adam Finkelstein and Rob Cook now both serve in official SIGGRAPH capacities to explore and implement a number of good ideas to make the publication of papers in our field more fair and rewarding, and have organized and led numerous meetings and discussions on the subject that have been very productive.

Thanks to a gracious invitation by Greg Turk, TOG authors can now present their work at SIGGRAPH 2008, which brings further exposure to the high quality of TOG publications. Thanks also to Kurt Akeley and Tom Funkhouser for continuing this process for SIGGRAPH Asia 2008 and SIGGRAPH 2009. We are also publishing the proceedings of SIGGRAPH Asia 2008 as a special fifth issue of TOG, but the graphics community will need to embrace and grow SIGGRAPH Asia with the same diligence that gave us the SIGGRAPH Annual Conference Proceedings to convince the next TOG EiC to continue this publication arrangement in a more permanent manner.

Serving as TOG EiC has been very rewarding and I would recommend it unreservedly to anyone interested in giving back to the graphics community as an opportunity for leadership and a platform for improving our field. The ACM manages the publication of the journal and provides support for an assistant to manage submissions and communications, leaving the EiC with the simple responsibility of filling the journal with great papers. This boils down to maintaining a functioning editorial board of associate editors, assigning new submissions to them and implementing their recommendations with final decisions, which takes a couple days each month. Please contact Holly Rushmeier if you are interested.

Sincerely,
John C. Hart
Editor-in-Chief
ACM Transactions on Graphics
ACM SIGGRAPH recognizes Ken Perlin for his broad contributions and impact across computer graphics, ranging from novel mathematical approaches for modeling to hardware interfaces. His creative research approach has produced many innovations in rendering, modeling, animation and user interfaces, and has inspired several new lines of research.

Ken is best known for harnessing the power of stochastic processes for modeling and animation. His adaptations of noise and turbulence mathematics into simple and readily implemented algorithms have become standard tools in virtually every graphics modeling system. His efficient construction of these functions has been applied to adding naturalistic realism to textures, shapes and motion. Noise and turbulence were just part of his seminal 1985 SIGGRAPH paper that also introduced the separation of volumetric representations of material structure and object shape, as well as a fully general programming language for surface shading. He is one of the leaders in the area of procedural modeling in graphics and animation.

Ken has introduced many novel approaches to user interaction. His software “Pad” demonstrated the power of an interface based on nesting and zooming of documents. On the hardware side of interfaces, he has contributed to autostereoscopic displays.

In a completely different area, Ken has created methods for developing responsive animated characters with emotions and personality. He used stochastic motion controls to enliven animated characters, pointing the way toward realistic behaviors. With his virtual environment IMPROV he created real-time characters with life-like responses to other real or virtual actors. In further studies he explored real-time facial animation, inverse kinematics, and stochastic posture controls applied to multiple interacting characters.

In recent years Ken has been developing innovative game-based approaches to science education for school-aged children. Also, in addition to publishing highly cited papers, he has shared his inventions through what he has called “The Web as a Procedural Sketchbook.” He is continually coding new ideas and sharing them through his web page. Through this medium others can view his art, play whimsical games, and learn fundamental concepts.

Running through all of Ken’s research are common threads of promoting community, supporting expressiveness and exploration, and forming bridges between technology and artistic expression. For the creativity, enthusiasm, and technical innovations that he brings to computer graphics, ACM SIGGRAPH is pleased to present this award to Ken Perlin.

Previous Award Recipients
2007 Greg Ward
2006 Thomas W. Sederberg
2005 Jos Stam
2004 Hugues Hoppe
2003 Peter Schröder
2002 David Kirk
2001 Andrew Witkin
2000 David H. Salesin
1999 Tony DeRose
1998 Michael F. Cohen
1997 Przemyslaw Prusinkiewicz
1996 Marc Levoy
1995 Kurt Akeley
1994 Kenneth E. Torrance
1993 Pat Hanrahan
1992 Henry Fuchs
1991 James T. Kajiya
1990 Richard Shoup and Alvy Ray Smith
1989 John Warnock
1988 Alan H. Barr
1987 Robert Cook
1986 Turner Whitted
1985 Loren Carpenter
1984 James H. Clark
1983 James F. Blinn
Maneesh Agrawala is this year’s recipient of the Significant New Researcher Award. This is in recognition of his outstanding early contributions to computer graphics and interaction techniques, particularly in the area of novel visualization techniques and user interaction models across a range of problem domains.

Maneesh has inspired many to rethink how we should render complex information, an area of increasing societal importance. This was first evidenced by his 2002 Ph.D. at Stanford University on “Visualizing Route Maps,” introducing the mapping abstraction of LineDrive, which both simplifies and clarifies route maps. He went on to work at Microsoft Research for three years and then moved to the University of California, Berkeley, where he is now an Assistant Professor.

The depth of Maneesh’s work comes in part from a thorough study of the techniques and principles artists and graphic designers use to improve the effectiveness of their work. Once common perceptual and cognitive design principles are discovered, Maneesh then finds creative ways to codify these principles in tools for artists, designers, and anyone who wants to explore complex structures and phenomena. Beyond his thesis work on LineDrive, Maneesh has applied this approach to a variety of visualization problem domains including visualizing structurally complex 3D models such as architecture, mechanical assemblies and anatomy via cutaways and exploded views; relighting images to enhance shape and detail; and the design of maps for motorists and tourists. The broad applicability of his widely published work to computer graphics and visualization techniques, as well as the fundamental aspects of user interface modeling, has made Maneesh a leader in his field, even at this early point in his career.


Maneesh’s work that has appeared at SIGCHI, IEEE Visualization and UIST is similarly wide and deep. Whether focusing on visualizing and interacting with complex information spaces, or automated layout and design problems, Maneesh has always relied on founding his work on perceptual or cognitive principles. His insistence on always keeping the user at the center of any development effort is a powerful one, and one we honor with this award.

Previous Award Recipients

2007 Ravi Ramamoorthi
2006 Takeo Igarashi
2005 Ron Fedkiw
2004 Zoran Popović
2003 Mathieu Desbrun
2002 Steven J. Gortler
2001 Paul Debevec
2008 ACM SIGGRAPH Awards

Outstanding Service Award

Stephen Spencer

In recognition for the quality, impact and magnitude of his work on the publication process in the field of computer graphics, ACM SIGGRAPH presents its 2008 Outstanding Service Award to Stephen Spencer.

Stephen’s distinguished service to the graphics community began in the early 90’s with work on “graphbib” – the ACM SIGGRAPH Computer Graphics Bibliography Database project. Before CiteSeer, Google Scholar and the ACM Digital Library, this forward-looking project begun by Eugene Miya consisted of a conveniently simple web form interface to a comprehensive database of publication citations of papers in graphics and related fields. Stephen continues to maintain this resource which now contains over 21,000 citations.

Stephen Spencer was appointed SIGGRAPH’s Director for Publications in July, 1995. In addition to overseeing SIGGRAPH’s publications, Stephen contributed his attention, input and insight over the past 13 years to the Executive Committee’s oversight of all of SIGGRAPH. During this time, Stephen also coordinated with every annual conference committee on the documentation for each venue in print, online and in electronic media. Amid this demanding schedule and responsibility, Stephen delivered quality results smoothly, dependably and quietly, as reported repeatedly in numerous recommendations.

As Director for Publications, Stephen’s contributions were critical in achieving SIGGRAPH’s goals of nurturing small focused-topic conferences, improving cooperation with other organizations and broadening its international ties. He provided his publishing production expertise toward not only the past 14 SIGGRAPH Annual Conference Proceedings but the 80-some proceedings for the other conferences, symposia and workshops SIGGRAPH supports and, in many cases, initiated. Even within the great tradition of SIGGRAPH volunteerism, Stephen’s efforts have been exceptional.

During this time, Stephen also guided SIGGRAPH through the transition from a classical print-based production environment into an entirely electronic-based production environment. We all appreciate that the “camera-ready” versions of our papers no longer require scissors and glue, but Stephen’s careful scrutinizing of formats and image reproduction quality preserved the fidelity of our results through this transition, including the special inks and inserts needed for some of SIGGRAPH’s more exotic papers.

More than the content, deliverables and events, Stephen says he most enjoys working with the members of our community, from volunteers to contributors to contractors. With this award, we collectively and formally reciprocate by expressing how much we enjoy working with Stephen, and to give him the recognition he never expects but so clearly deserves.

Proceedings Assembled

- ACM SIGGRAPH Conference Proceedings: 1995–.
- APGV (Applied Perception in Graphics and Visualization): 2005–.
- IPT/EDT: 2007–.
- NPAR (Non-Photorealistic Animation & Rendering): 2004, 2006–.
- Sandbox Symposium: 2006–.
- Sketch-Based Interfaces and Modeling: 2007.
- Solid & Physical Modeling Symposium: 2005–.
- VisSym (Symposium on Visualization): 2004.
- Web3D: 2004–.

Previous Award Recipients

- 2006 John Fujii
- 2004 Judy Brown and Steve Cunningham
- 2002 Bertram Herzog
- 2000 Tom DeFanti and Copper Giloth
- 1998 Maxine Brown