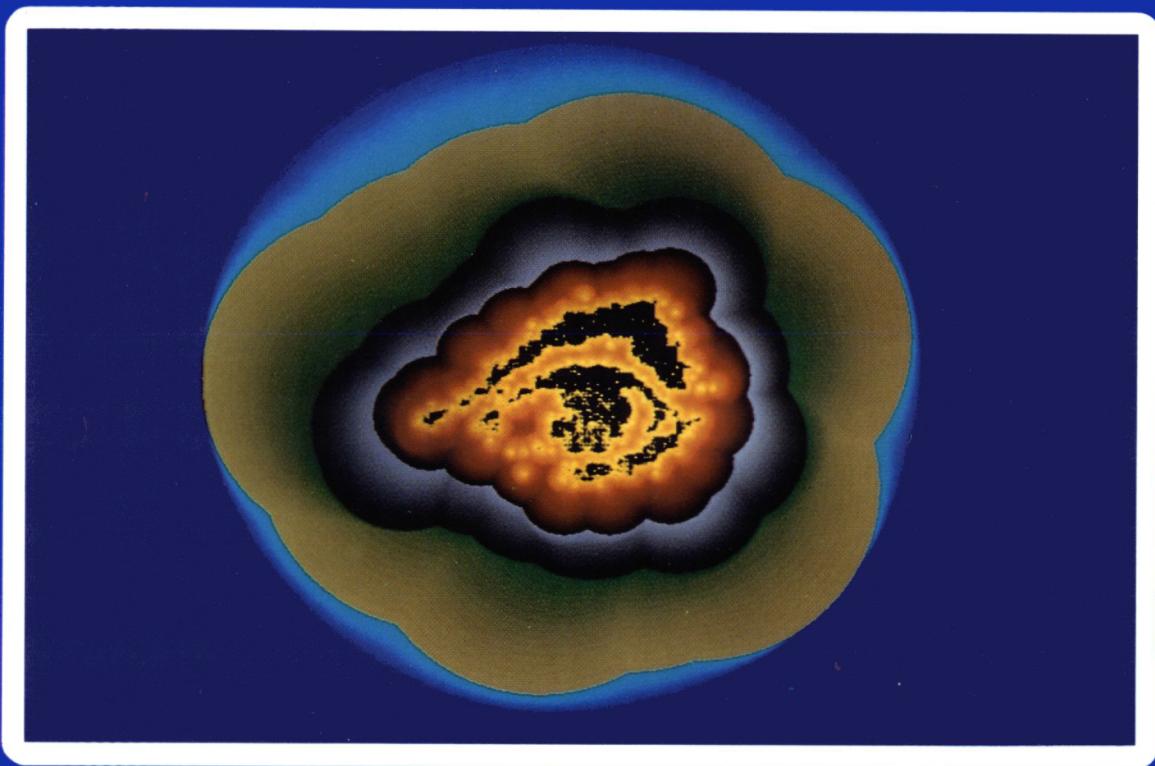


Proceedings Graphics '95 Interface 95



**17 - 19 May/mai 1995
Québec, Québec**



**Canadian Human-Computer
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Proceedings

Graphics Interface '95

Wayne A. Davis & Przemyslaw Prusinkiewicz, Editors



Québec, Québec
17-19 May/mai 1994



Message du président du comité de programme

Graphics Interface continue d'attirer des articles de qualité sur l'infographie et dialogue humain-ordinateur. Les soixante-quatre communications soumises cette année proviennent du monde entier. Chaque soumission a été considérée par deux membres du comité du programme ainsi que deux arbitres externes. Trente communications ont été acceptées au programme final. De plus, Bill Buxton d'Alias Research et l'université de Toronto, Pat Hanrahan de l'université Stanford, et Gavin Miller d'Apple Computer ont accepté de présenter des communications invitées.

Je voudrais remercier les auteurs de toutes les soumissions, qu'elles aient été acceptées ou non. Je voudrais aussi exprimer ma profonde gratitude aux membres du comité de programme et aux arbitres externes qui ont tous offert leur temps et leur expérience pour assurer un programme de grande qualité. Camille Sinanan a organisé la procédure d'arbitrage d'une manière impeccable. Barry Joe m'a aidé à préparer la demande de subvention pour la conférence. Paul Heckbert, Mark Hammel, Victor Klassen et Marceli Wein ont aidé à annoncer la conférence par des moyens électroniques. Je vous en remercie chaleureusement.

Przemyslaw Prusinkiewicz
L'université de Calgary

Message from the Program Chair

The program of Graphics Interface continues to attract quality papers reporting research on computer graphics and human-computer interaction. Sixty-four papers were submitted this year from all over the world. Each paper was reviewed by two committee members and two external referees, and thirty papers were accepted for inclusion in the final program. In addition, Bill Buxton from Alias Research and the University of Toronto, Pat Hanrahan from Stanford University, and Gavin Miller from Apple Computer have kindly agreed to present invited talks.

I would like to thank the authors of all papers submitted to GI'95, as well as the program committee members and the referees who volunteered their time to ensure the quality of the program. Very special thanks go to Camille Sinanan for her invaluable assistance in keeping the reviewing process well organized, to Barry Joe for help with the conference grant application, and to Paul Heckbert, Mark Hammel, Victor Klassen, and Marceli Wein for their help with electronic announcements.

Przemyslaw Prusinkiewicz
The University of Calgary



Message from the President

It is with great pleasure that I welcome attendees to Québec City and Graphics Interface '95. This is the twenty first in a series of graphics conferences started in 1969 in Ottawa and held across Canada in various years. It is the longest running graphics conference in the world and continues to provide a significant contribution to the field of computer graphics and interactive techniques. The Canadian Human-Computer Communications Society is pleased to be able to sponsor such a conference and is indebted to all those who have contributed time and effort into making this conference the success that it is.

Again following the pattern established in previous conferences, Graphics Interface is being held in conjunction with Vision Interface. Holding these conferences jointly has helped to promote the interchange of ideas and to raise the profile of both conferences. It is the fervent desire of CHCCS to continue this association.

It is important to recognize the efforts of all those who have helped to organize this conference. In particular, the program requires a competent program chair, a program committee dedicated to selecting the most appropriate papers and a large number of talented reviewers to read and assess each submission. We should also thank all those who submitted papers. Preparing a paper for submission is a lot of work and effort. Unfortunately, not every paper will be accepted; however, every submission is important and appreciated. Thank you for your assistance and a job well done.

Wayne A Davis
President CHCCS

Le message du Président

C'est avec grand plaisir que j'accueille tous les participants à Québec et à la conférence Graphics Interface '95. Cette conférence est la vingt et unième d'une série qui a débuté en 1969 à Ottawa, et qui s'est tenue à travers le Canada au fil des ans. Cette conférence possède le record de longévité absolu des conférences d'infographie et continue à apporter des contributions significatives à ce domaine ainsi qu'aux techniques interactives. La Société canadienne du dialogue humain-machine est fière de parrainer cette conférence et désire témoigner sa reconnaissance envers tous ceux qui ont contribué temps et efforts à faire de cette rencontre une réussite.

Graphics Interface sera tenu conjointement avec Vision Interface, et suivra donc le mouvement établi par les conférences précédentes. La tenue de ces deux conférences a favorisé les échanges d'idées et rehaussé le profil de chacune. Le SCDHM désire de tout coeur poursuivre cette association.

Il est important de reconnaître les efforts de tous ceux qui ont participé à l'organisation de cette conférence. En particulier, le programme nécessite un président compétent, un comité qui se consacre à la sélection des articles les plus appropriés, ainsi qu'une panoplie d'évaluateurs experts pour lire et évaluer chacun d'eux. Nous nous devons aussi de remercier tous ceux qui ont soumis les articles. Leur préparation implique beaucoup de travail et d'efforts et, malheureusement, tous ne peuvent être acceptés. Cependant, chacun d'eux est important et fort apprécié. Merci pour votre aide ainsi que pour le travail bien fait.

Wayne A Davis
Président SCDHM



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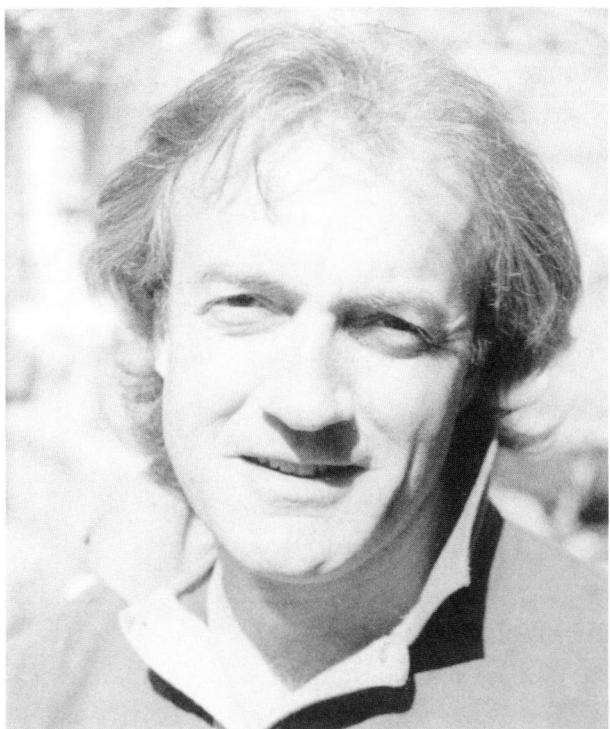
Terry S Yoo



The 1995 CHCCS Achievement Award

William A.S. Buxton

Alias Research Inc. and University of Toronto



The recipient of this year's CHCCS Achievement Award is Bill Buxton. We wish to recognize and acknowledge the significant contribution over the many years that Bill has made to the field of human-computer interaction. Bill has demonstrated that he is a leader, a creative researcher and an excellent communicator who inspires enthusiasm among his students.

Bill Buxton was born in Edmonton, Alberta and completed his first university degree, a Bachelor of Music with specialty in tenor saxophone, at Queen's University. Bill was drawn towards exploring the role of electronics and computers in composition and performance of music and hence studied electronics and technology. Bill's experimentation with the interactive music system at the National Research Council helped sway him towards pursuing a serious career in computational music. Following advanced studies in experimental music at Utrecht State University in Netherlands Bill completed the transition by earning an M.Sc. degree in Computer Science from University of Toronto.

From this starting point, Bill launched an active and productive career in experimental research in human-

computer interaction (HCI). The recurring scheme in the transition to HCI and computer science has been that the computer was becoming a powerful tool in many specialties, however a serious obstacle to success has been the poor quality of the user interface as well as a lack of ease-of-use for specialists in their own disciplines.

As a professor of Computer Science, together with Ron Baecker, Bill brought to eminence the interaction laboratory at the University of Toronto. Students who completed graduate studies at the University of Toronto have contributed to improved user interfaces in many Companies. Some of the students Bill supervised (or co-supervised) were Brad Myers and Eugene Fiume.

Bill recognized early in his career that papers, while important and a vital component of our archival history, are inadequate for conveying the new ideas in HCI. It is really through presentations, both live and on video tape, that the ideas and innovation in HCI technology are conveyed to a wider community of researchers. Bill Buxton is an excellent and enthusiastic communicator. In addition to presenting many formal papers, he has been a sought-after invited speaker—a fact that offered him an opportunity to raise, before a wider audience the awareness that HCI is important and is worth doing it well. Communication with this wider audience has had an impact on many organizations where the CEO of, say a bank, having heard a talk by Bill, would bring the word to the staff, making an internal case for HCI an easier "sell".

Bill's other activity has been as a consultant and a researcher in industrial labs. In addition to working with several manufacturers of personal computers, Bill has had an on-going relationship with Xerox, both with PARC and with EuroPARC. These innovative collaborations led to several key papers at SIGGRAPH. Bill's activity for the last couple of years has been at Alias Research as Principal Scientist - User Interface Research. Bill's ambition is to enhance the ease of use and productivity of the successful Alias tools for building 3D models and animation.

Though this award, members of the Society wish to acknowledge the contribution by Bill Buxton to the research in human-computer interaction.



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Graphics Interface '96



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Electronic Theatre

Film and video tapes that illustrate the use of computer graphics and interactive techniques will be considered for presentation at the 1994 conference. This material could present new techniques, the artistic application of computer graphics, or a historical perspective of the field. All submitted material will be reviewed. Due to time constraints the entire film or video tape may not be shown. The committee reserves the right to edit all submitted material for presentation. Submissions must be received by **1 April 1996**.

Graphics Interface '96 is the twenty second Canadian Conference devoted to computer graphics and interactive techniques, and is the oldest regularly scheduled computer graphics conference in the world. Now an annual conference, film festival, and workshops, **Graphics Interface** has established a reputation for a high-quality technical program. The 1996 conference will be held in **Toronto** on **21-24 May 1996**.

Graphics Interface '96 is sponsored by the Canadian Human Computer Communications Society, and will be held in conjunction with **Vision Interface** and **Artificial Intelligence**.

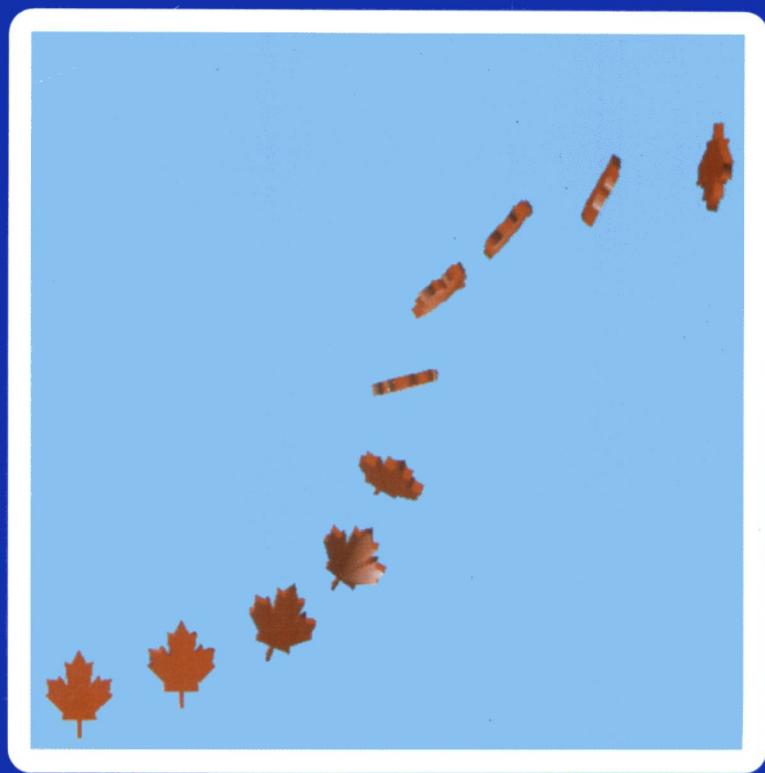
Conference Program

Contributions are solicited describing unpublished research results and applications experience in all areas of computer graphics, specifically including the following:

- Image Synthesis & Realism
 - Shading & Rendering Algorithms
 - Geometric Modeling
 - Computer Animation
 - Interactive Techniques
 - Graphics for CAD/CAM
 - Computer-Aided Building Design
 - Industrial & Robotics Applications
 - Graphics in Business
 - User Interfaces
 - Windowing Systems
 - Computer Cartography
 - Image Processing
 - Medical Graphics
 - Graphics in Education
 - Graphics & the Arts
 - Visualization
 - Graphics in Simulation

Send five (5) copies of a full paper (20 double-spaced pages or less) to the Program Chair by **31 October 1995**. Refereeing will be blind. Only the title, without abstract or any indication of authorship or author location, should appear on the manuscript body. A separate sheet should contain the manuscript title and abstract together with the full names, postal address, phone numbers, fax numbers, and email addresses for all authors. One author should be designated contact author for all subsequent correspondence regarding the paper. Accepted Papers will be published in the Conference Proceedings. Notification of acceptance or rejection will be mailed to the contact author by **1 February 1996**. Camera ready copy of accepted papers is due **28 March 1996**. Each paper will be allotted up to eight (8) pages in the proceedings. Extra charges will be made for papers exceeding the limit and for colored photos. The Proceedings for GI'96 will be distributed to SIGGRAPH Plus members. Exceptionally good papers will be considered for publication in Computer Graphics Forum.

Further information can be obtained from the Program Chair or through:
<http://www.cgl.uwaterloo.ca/~rhbartel/GI96/info.html>



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