ACM MULTIMEDIA 96

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Stephan Fischer
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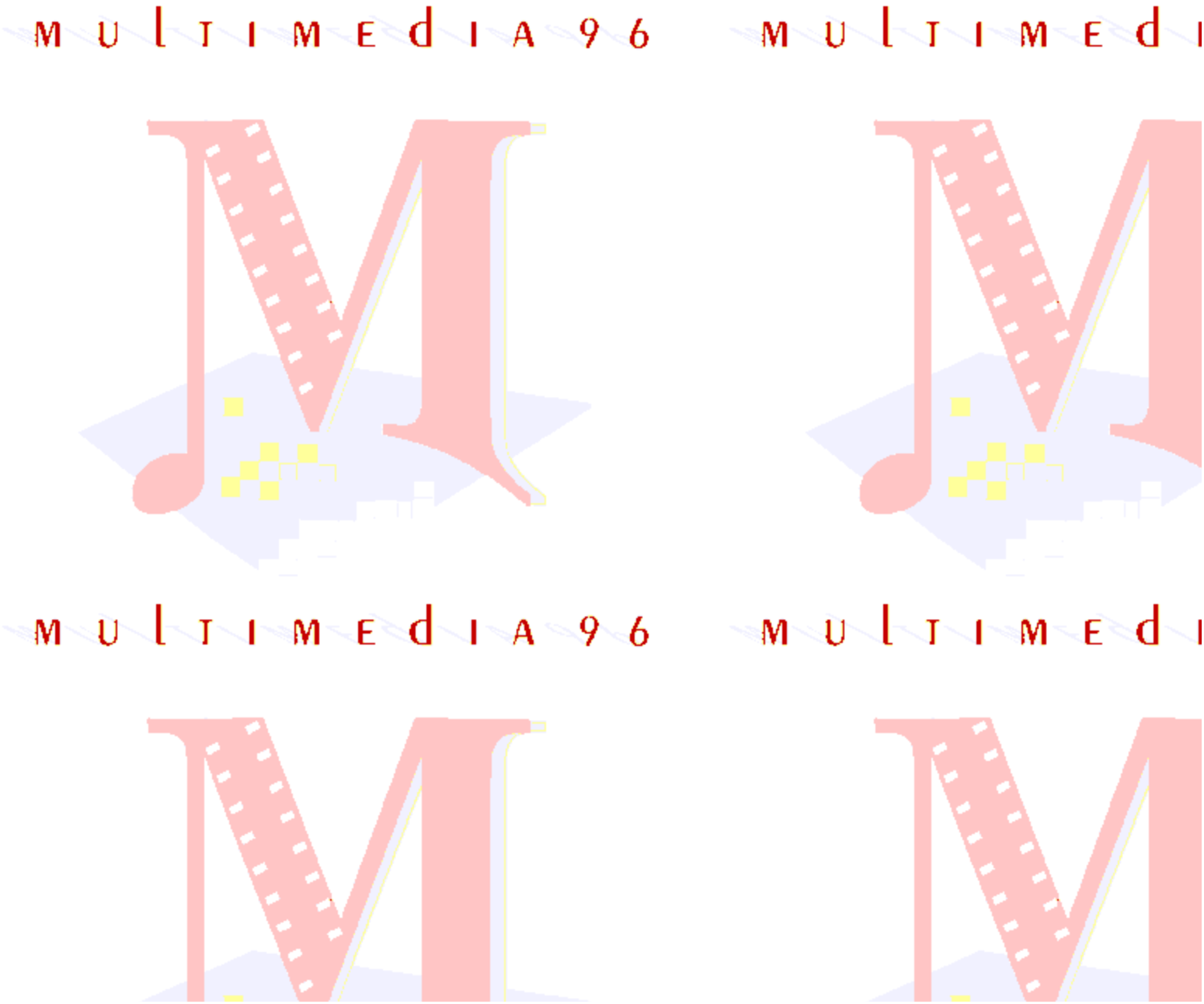
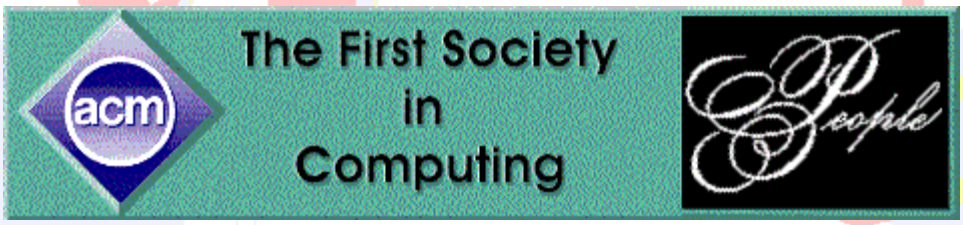


ACM MULTIMEDIA 96

The Fourth ACM International Multimedia Conference and Exhibition



ADVANCE PROGRAM

MULTIMEDIA 96 MULTIMEDIA 96

18-22 November 1996
Hynes Convention Center
Boston, Massachusetts, USA

Co-located with SPIE's Symposium on Voice, Video and Data Communication, and Broadband Network Engineering program and overlapping with CSCW, to be held in nearby Cambridge.

MULTIMEDIA 96 MULTIMEDIA 96

Welcome to ACM Multimedia '96

In what seems in retrospect to have been an astonishingly short time, multimedia has progressed from a technically-challenging curiosity to an essential feature of most computer systems -- both professional and consumer. Accordingly, leading-edge research in multimedia no longer is confined to dealing with processing or information-access bottlenecks, but addresses the ever-broadening ways in which the technology is changing and improving interpersonal communication, professional practice, entertainment, the arts, education, and community life.

This year's program emphasizes this trend: off-the-shelf building blocks are now available to construct useful and appealing applications which are highlighted in the Demonstration and Art venues. In addition to the full complement of panels, courses, and workshops, the conference program features a distinguished set of technical papers. Keynotes will be provided by Glenn Hall, the Technical Director of Aardman Animations whose work includes Wallace and Gromit; and Professor Bill Buxton of the University of Toronto and Alias | Wavefront Inc.

We invite you to join many of multimedia's top researchers, educators, system implementors, content creators, artists, and others as they together explore where the technology and the content are headed.

Your trip to Boston can be even more worthwhile if you take part in other events scheduled the same week. ACM Multimedia '96 immediately follows the ACM Computer-Supported Cooperative Work conference (for information, http://www.acm.org/sigchi/cscw96/), and is co-located with SPIE's International Symposium on Voice, Video, and Data Communications (http://www.spie.org/web/meetings/calls/pe96_call.html); we have arranged registration discounts for MM '96 registrants who wish to attend these conferences as well.

Philippe Aigrain and V. Michael Bove, Jr.
General Chairs

Wendy Hall and Tom Little
Program Chairs

Special Events

Wednesday, November 20
9:00-10:30am
Opening Session
With keynote speaker Glen Hall, Technical Director of Aardman Animations.

Aardman Animations has a long history of adopting multimedia techniques. All the twenty six 35mm Mitchell cameras in the Bristol, England, studios are equipped with digital video and disc based replay. The studio, under the technical leadership of Glenn Hall, has become a world leader in model animation, gaining three Academy Awards (Oscars) for Creature Comforts and for two Wallace and Gromit films. Multimedia is used in the development and transmission of studio work and also for actual multimedia products on CD ROM. Known in the USA for its coast to coast campaign, Chevron with Tekron, for the Chevron oil company, the company is currently developing its first feature film. Glenn Hall has been with Aardman Animations over 10 years, after an early career in film and TV lighting. He leads the technical team responsible for the technology the studio uses, develops, and supplies to other studios.

He is currently on a part time secondment to the University of the West of England, Bristol, where as Director of the MediaLab, he is developing UWE's interests in digital media research. He has built his career in being where art and technology meet, a rare combination of technical knowhow with artistic interest. He is active in community led economic regeneration projects, and is a case study in the UK governments' Information Society Initiative.

Thursday, November 21
12:30-2pm
SIG Multimedia Membership Meeting

The annual SIGMultimedia business meeting is open to all conference participants. We will discuss ongoing and future SIG activities, including conferences, workshops, arts and education events, and electronic publications. Please attend.

Thursday, November 21
6:00pm
Reception

The ACM MultiMedia '96 Committee cordially invites you to a reception on Thursday, November 11, 1996, 7:00 P.M. - 11:00 P.M. at Top of the Hub Restaurant and Skywalk in the Prudential Tower, 800 Boylston Street, Boston, MA. Enjoy a breathtaking view of the entire city 50 floors above Boston. The Skywalk gives you a 360 degree view from the Back Bay to Fenway Park, The Charles river and Cambridge, all the way to South Boston and beyond! Come meet and greet your colleagues and catch up on the latest news from industry enthusiasts. We look forward to seeing you

there!

Friday, November 22
11:00am-12:30pm
Closing Session
With keynote speaker Bill Buxton from University of Toronto and Alias/Wavefront.

Bill Buxton is head of User Interface Research at Alias/Wavefront, Inc., of Toronto, a leading company specializing in computer graphics tools for the creation of digital content in the design and entertainment industries. He is also an Associate Professor in the Department of Computer Science at the University of Toronto, where he is Scientific Director of the Telepresence Project and of the Input Research Group.

Buxton is active in studying new methods of input and interaction, applications of new media, and the social, technological and business aspects of the so-called "information super highway". He is a scientist who, in addition to the University of Toronto, has had a long relationship with Xerox's Palo Alto Research Centre (PARC). He is a designer, teacher and critic who has written and spoken extensively on how human-centred design can be applied to best capture the full potential and avoid the pitfalls of emerging technologies.

In 1995, Buxton became the third recipient of the Canadian Human-Computer Communications Society Award for contributions to research in computer graphics and human-computer interaction.

Friday, November 22
1:30-3:30pm
Art and Multimedia Showroom
Closing art session with Timothy Druckrey & Monika Fleischmann

This session will draw together the concerns raised during the panels and in the "showroom" in terms of the relationship between practical and critical approaches to narrative. It will also attempt to elicit a dialogue with the audience and panellists.

Timothy Druckrey is an independent curator, critic and writer concerned with issues of photographic history, representation, and technology. He lectures internationally about the social impact of digital media and the transformation of representation and communication in interactive and networked environments. He co-organized the international symposium Ideologies of Technology at the Dia Center of the Arts (an co edited the book available from Bay Press: Culture on the Brink: Ideologies of Technology) and co-curated the exhibition Iterations: The New Image at the International Center of Photography and edited the book published by MIT Press. As a theorist of contemporary media, he has curated exhibitions and has contributed extensively to numerous publications, including San Francisco Camerawork, Afterimage and Views. He is American Editor of Ten.8 and Perspektief, a founding member of MergedMedia (a collective for new media), and a correspondend for several on-line journals concerned with the politics and history of media technology. He is currently writing a study of the relationships between technology and photography called Photography, Technology and Representation (forthcoming from Manchester University Press), editing Electronic Culture: Technology and Visual Representation (due in Oct. 1996) collecting essays on the social impact of digital technology.

Monika Fleischmann is not only a research artist, but since 1992 she is also Head of Computer Art activities at GMD's Institute for Media Communication. She is responsible for the 'Cyberstar' competition on interactive concepts for TV

which she initiated together with WDR (German TV) and German TELEKOM. She works on (networked) communication concepts, real and virtual environments and interactive installations and performance. She had teaching positions at the HdK, Berlin and the Kunsthochschule fuer Medien in Cologne. In 1988 she was co-founder, artistic director and chair of the board of Art+Com in Berlin, a research institute which is well known today for its innovative work in art, technology and science. Fleischmanns work has been exhibited widely throughout the world in festivals and exhibitions of new media art like for example the Venice Bienale, the Centre Pompidou in Paris or the Museum fuer Gestaltung in Zuerich. She was awarded in 1992 at Ars Electronica in Linz with the Golden Nica, nominated for the Unesco Award 1993, exhibited and specially honored at Siggraph's Machine Culture 1993 and at the Interactive Media Festival in Los Angeles '94.

Conference-at-a-Glance

Monday, November 18, 1996

9:00-5:30	9:00-5:30	9:00-12:30	9:00-12:30	2:00-5:30	2:00-5:30
Course MAP1	Course MAP2	Course MA1	Course MA2	Course MP1	Course MP2
Multimedia and Enabling Technologies and Applications	Systematic Design of Hypermedia Applications	Design Principles for Multimedia File Systems	Building and Applying Digital Libraries I: Introduction	The DAVIC Model for Interactive Television Systems	Building and Applying Digital Libraries II: Research

Tuesday, November 19, 1996

9:00-5:30	9:00-5:30	9:00-12:30	9:00-12:30	9:00-5:30	9:00-5:30
Course TAP1	Course TAP2	Course TA1	Course TP1	Workshop	Workshop
Graphic Design for Multimedia	Multimedia Networking	Image and Video Databases	Large Scale Hypermedia Information Management	Courseware, Training and Curriculum in Multimedia	Multimedia Processors & Embedded Systems

Wednesday, November 20, 1996

The Art and Multimedia Showroom operates Wed. to Thursday 9:00am-5:30pm and Friday 9:00am-1:30 pm.

9:00-10:30	Opening session with keynote speaker Glen Hall from Aardman Animations	
10-30-11:00	Coffee break	
11-12:30	11-12:30	11-12:30
Papers 1A: MM Analysis	Papers 1B: Authoring I	Panel 1: Selling Multimedia Goods and Services Over Broadband Networks
12:30-2:00	Lunch break	
2-3:30	2-3:30	2-3:30
Papers 2A: Image	Papers 2B: Systems	Panel 2: Principled Design of Multimedia in Education and

Parsing	Building	Training
3:30-4:00	Coffee break	
4-5:00	4-5:00	4-5:30
Papers 3A(short): QoS/Synch	Papers 3B(short): Applications	Panel 3: Getting Control of Media: Multimedia Scripting Languages
5:00-6:30	Demonstrations	
6:30-8:00	Joint panel with SPIE	

Thursday November 21, 1996

The Art and Multimedia Showroom operates Wed. to Thursday 9:00am-5:30pm and Friday 9:00am-1:30 pm.

9:00-10:30	9:00-10:30	9:00-10:30	9:00-4:00
Papers 4A: Groupware	Papers 4B: Coding	Panel P4: Storytelling after Cinema I	Workshop 3: Interactive Narrative
10-30-11:00	Coffee break		
11:00-12:30		11:00-12:30	
Demonstrations		Panel 5: New art venues	
12:30-2:00		12:30-2:00	
Lunch break		SIG Multimedia Membership Meeting	
2:00-3:30	2:00-3:30	2:00-3:30	
Papers 5A: UI	Papers 5B: Servers	Panel 6: Virtual Environment Research and Appl.	
3:30-4:00	Coffee break		
4:00-5:00	Award papers		
6:00 on	Reception		

Friday, November 22, 1996

The Art and Multimedia Showroom operates Wed. to Thursday 9:00am-5:30pm and Friday 9:00am-1:30 pm.

9:00-10:30	9:00-10:30	9:00-10:30	9:00-10:30	9:00-5:30	9:00-5:30
Papers 6A: Authoring	Paper 6B: Networks	Panel 7: Storytelling After Cinema II	Panel 8: Architecture Time and Fragmented Space	Workshop: Digital Video Libraries and Interoperab'y	Workshop: Using Multimedia Assessment Tools
10:30-11:00	Coffee Break				
11:00-12:30	Closing session with keynote speaker Bill Buxton from University of Toronto and Alias/Wavefront				
1:30-3:30	Closing art and MM session with Timothy Druckrey and Monika Fleischmann				

Ongoing Events

- The demonstrations which will be running Wednesday, 5:00- 6:30pm and Thursday 11:00am-12:30pm;
- The Art and Multimedia showroom, which will be running Wednesday and Thursday, 9:00am-5:30pm; Friday, 9:00am-1:30pm with a special closing session Friday from 1:30-3:30pm.]

Demonstrations

Arding Hsu
Siemens Corporate Research
Princeton, NJ, USA
Demonstrations Chair

We will be offering demonstrations representative of new technologies, unique applications, and interesting media content in the areas outlined below:

- Indexing and Retrieval of Digital Video
- Multimedia Authoring and Development environments
- Internet Multimedia
- Interactive Courseware and Systems
- Media Sharing and Distribution
- Content-based Image Access
- Media Presentation in Different Application Domains

Wednesday, November 20
5:00-6:30pm

Thursday, November 21
11:00am-12:30pm

Art & Multimedia Showroom
'Storytelling After Cinema'

Monika Fleischmann
Institute for Media Communication (IMK) - GMD
Sankt Augustin, Germany
Art Chair

Art Program Committee:

Monika Fleischmann, GMD-IMK, Sankt Augustin, Germany
Timothy Druckrey, Curator, Critic, Writer, New York
Wolfgang Strauss, GMD-IMK & HBK Saar, Saarbruecken
Timothy Garrand, New England College, Londonderry, NH
Regina Cornwell, Curator, Critic, Writer, New York
Dieta Sixt, Goethe Institute, Washington
Wayne Wolf, Dept. of Electrical Engineering, Princeton University
Arding Hsu, Siemens Corporate Research, Princetion, NJ
Bob Allen, Bellcore, Morristown, NJ
V. Michael Bove, MIT Media Lab, Cambridge, MA
Philippe Aigrain, IRIT, Universit, Paul Sabatier, Toulouse, France
Allan Kuchinsky, Hewlett-Packard Labs, Palo Alto, CA

Art Showroom Committee:

Timothy Druckrey, Curator, Critic, Writer, New York
Monika Fleischmann, Artistic Director, GMD-IMK, Sankt Augustin, Germany
Wolfgang Strauss, Architect, GMD-IMK, Sankt Augustin, Germany
Gerhard Eckel, Composer, GMD-IMK, Sankt Augustin, Germany
Petra Unnuetzer, Art Theory,GMD-IMK & Videonale Bonn, Germany

The complexities of organizing a forum/workshop (not an exhibition) on the issues of story-telling and interactive narratives obviously implicates projects from all areas of electronic media. Though we are certainly aware of a number of important installation, performance, and immersive works, we are restricted by the requirements of space and time, a support structure (particularly equipment and staff), and the kind of budget necessary to bring large scale works to the forum for such a short period and a limited audience.

For these reasons, we have chosen to limit the works selected to CD-ROM and WWW sites. This does not preclude the inclusion of larger scale works in the discussions utilizing documentary materials (slides, tapes, or sound).

"Click-Art" and "WebArt - ArtWeb" will present works of artists like William Forsythe, Jim Gasparini & Tennessee Dixon, Ken Feingold, Lewis Baltz, Tony Oursler & Constance DeJong, George Legrady, David Blair, Brad Miller, KP Ludwig John & Die Veteranen, Eric Lanz, Jean-Louis Boissier, Luc Courchesne, George Legrady, Bill Seaman, Miroslav Rogala, Tamas Waliczky, Perry Hoberman, Jeffrey Shaw, and others.

Wednesday and Thursday, November 20 and 21
9:00am-5:30pm

Friday, November 22
9:00am-4:30pm.

Closing art session with Timothy Druckrey & Monika Fleischmann
Friday, November 22
1:30-3:30pm
(Please refer to Special Events listing for details.)

Art

- Jim Gasparini and Tennessee Dixon: Scrutiny in the Great Round
- Ken Feingold: Orpheus
- Lewis Baltz: The Deaths in Newport
- Tony Oursler and Constance DeJong: Fantastic Prayers
- George Legrady: An Anecdoted Archive of the Cold War
- David Blair: Wax
- Brad Miller: A Digital Rhizome
- KP Ludwig John: Die Veteranen (1995), six cross first (1996), Jandl(1996)
- Jeffrey Shaw with Dirk Groeneveld: The Narrative Landscape

amongst others

Art Mediation

- William Forsythe: Improvisation Technologies

Interactive Art Magazine

ZKM Karlsruhe: artintact 1: Artist's interactive CD-ROMagazine

- Jean-Louis Boissier (F): Flora petrinsularis (1993/94)
- Eric Lanz (CH/D): Manuskript (1994) <
- Bill Seaman (USA/AUS): The Exquisite Mechanism of Shivers (1991/94)

ZKM Karlsruhe: artintact 2 - Artist's interactive CD-ROMagazine

- Luc Courchesne (Can): Portrait One (1990/95)
- Miroslav Rogala (PL/USA): Lovers Leap (1994/95)
- Tamas Waliczky (H/D): The Forest (1993/95)

ZKM Karlsruhe: artintact 3 - Artist's interactive CD-ROMagazine

- Ken Feingold
- Perry Hoberman: Bar Code Hotel
- George Legrady - with an introduction by Peter Weibel

Design Mediation:

- Vitra Design Museum & ZKM Karlsruhe 100 Masterpieces - from the Vitra Design Museum Collection

Contact:
Monika Fleischmann, fleischmann@gmd.de
Timothy Druckrey, druckrey@interport.net
Gerhard Eckel, eckel@gmd.de

Courses

ACM Multimedia'96 is proud to offer an exciting selection of courses by a team of international experts. Learn the current state of the art and future trends in multimedia communication and networking, design of multimedia applications, digital library, multimedia information management, and more.

The course schedule is designed to allow attendees to learn various aspects of of a topic at introductory, as well as advanced level. Take advantage of this unique opportunity to get the most out of ACM Multimedia'96 by attending at least one course.

Rajiv Mehrotra
Kodak Imaging Research & Advanced Development
Courses Chair

MAP1

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Monday, November 18
9:00am-5:30pm
Multimedia Enabling Technologies and Applications
Course Level: Basic
This course is for beginners in multimedia and its objective is to teach the fundamentals of multimedia enabling technologies and demonstrate some applications. It will cover the following topics, with computer animations and video clips of international developments:

- Brief introduction and history of multimedia
- Multimedia networking technologies (Legacy LANs, isoEthernet, SMDS, ADSL, ATM)
- Image, video and audio compression standards (JPEG, MPEG-1, MPEG-2, H.261/263)
- Communications protocols for multimedia (TCP/IP, ST-II, RSVP, XTP) .
- Multimedia synchronization and application examples
- Multimedia conferencing and collaboration tools
- Multimedia and the Internet
- Multimedia to the home

Organizer and Lecturer:

Dr Nicolas D. Georganas, Fellow IEEE, is Professor of Electrical and Computer Engineering and Director of the Multimedia Communications Research Laboratory (MCRLab), University of Ottawa, Canada. He has led several multimedia application development projects , since 1984. He is a member of the Executive of the IEEE CS Technical Committee on Multimedia and Chair of its Enabling Technologies sub-committee. He is the General Chair of the IEEE Multimedia Systems'97 Conference in Ottawa. He has served as Guest Editor of the IEEE Journal on Selected Areas in Communications, issues on "Multimedia Communications" (April 1990) and on "Synchronization Issues in Multimedia Communications" (1996) and as Technical Program Chair of IEEE MULTIMEDIA'89 (Montebello, Canada, April 1989) and of the ICCC Multimedia Communications'93 Conference in Banff, Alberta, Canada. He is in the Editorial Boards of the Journals Performance Evaluation, Computer Networks and ISDN Systems, Computer Communications and Multimedia Tools and Applications, and was an editor of the IEEE Multimedia Magazine. He was elected Fellow of IEEE for "leadership in university-industry research in, and performance evaluation of, multimedia communication networks and systems".

MAP2

Monday, November 18
9:00am-5:30pm
Systematic Design of Hypermedia Applications
Course Level: Intermediate

The objective of the course is to improve the ability of expressing the requirements and designing Hypermedia applications, disregarding the delivery medium (CD-ROM or WWW), the development environment and the development tools. Intended audience of this course are publishers, users, multimedia designers and developers, project managers and researchers. The participants will learn a set of conceptual primitives that can be used to describe and to design hypermedia applications in a precise and systematic way, covering structural, dynamic and presentation aspects. In addition the course will address some crucial issues concerning multimedia application development: the need of modularization, the relevance of the notion of reuse (i.e., of using multimedia contents, objects and operations in different contexts and for different purposes), the appropriate way of using development tools and environments. A final subject will be how the evaluate the quality and usability of hypermedia applications.

More specifically, the course covers the following topics: conceptual primitives for hypermedia design, modularization, reuse of hypermedia objects, specific problems for WWW applications, design phases, life-cycle of hypermedia development, evaluation and usability test of hypermedia applications.

Limited exposure of the participants to modern hypermedia applications (CD-ROM's or WWW) is useful, but not required. A larger number of demonstrations (around 10) will be used in order to exemplify the conceptual aspects of the presentation.

Organizers and Lecturers:

Franca Garzotto is Research Associate at the Department of Electronics and Information, Politecnico di Milano. She

has aDegree in Mathematics from the University of Padova (Italy) and a Ph.D. in Computer Science from Politecnico di Milano. She has been active in the following research fields: data base systems, conceptual modelling of documents, hypertext and hypermedia modelling, hypermedia authoring systems, multimedia development tools, multimedia evaluation. She served as Program Chair of the International Workshop on "Hypermedia Design", held in Montpellier - France in June 1995). She served as Co-Chair of the International Workshop on "Evaluation and Quality Criteria for Multimedia Applications", held at MM'95. She has published several papers on the subject of hypermedia design and has cooperated in the development of advanced models (HDM) for the design and implementation of Hypermedia applications.

Paolo Paolini has received a degree in Physics from the University of Milan, master and Ph.D. in Computer Science from UCLA. He has been active researcher in the areas of Data Base (design and modelling), Office Automation, Hypermedia Design and Modelling, Hypermedia tools and implementation. He has conducted several research projects in the area of hypermedia, and also coordinated the implementation of several hypermedia applications, in the area of corporate training, education, cultural information points, tourism. He has cooperated in the development of advanced models (HDM) for the design and implementation of Hypermedia applications, and published a large number of papers on Hypermedia design. He has been general chairman of the ACM hypertext conference held in Milan (ECHT'92) and he is currently Associate Editor of the ACM journal Transactions on Information Systems (TOIS).

MA1

Monday, November 18
9:00am-12:30pm
Design Principles for Multimedia File Systems
Course Level: Intermediate

Since images, audio, and video differ significantly from textual and numeric data (with respect to their real-time characteristics, data rate, etc), conventional file systems are proving to be inadequate for supporting multimedia applications. On the other hand, video-on-demand servers, which are optimized for storing audio and video data, do not support textual and numeric data, and hence, cannot be used in general purpose computing environments. These shortcomings have spurred research efforts in designing and implementing integrated multimedia file systems that provide storage, retrieval, and editing facilities for various data types.

This course will provide a comprehensive overview of various issues involved in the design of such multimedia file systems. Specifically, we will examine placement and retrieval techniques for multimedia data over disk-arrays, buffer management policies, and design techniques for fault-tolerant and scalable multimedia file servers. We will discuss the insights gained from our implementation of a prototype multimedia file system. Since we will present both fundamental design principles as well as a detailed case study, the course will be of interest to casual participants as well as experienced practitioners. A copy of the slides, a collection of papers in the area as well as an extensive bibliography on these topics will be distributed to each participant.

Organizer:

Harrick M. Vin is currently an Assistant Professor of Computer Sciences, and the Director of the Distributed Multimedia Computing Laboratory at the University of Texas at Austin. His research interests are in the areas of multimedia systems, high-speed networking, mobile computing, and large-scale distributed systems. Over the past 5 years, he has co-authored more than 55 papers in leading journals and conferences in the area of multimedia systems.

Lecturers:

Pawan Goyal and Prashant J. Shenoy
Department of Computer Sciences
Univ. of Texas at Austin, Austin, TX

MA2

Monday, November 18
9:00am-12:30pm
Building and Applying Digital Libraries I: Introduction
Course Level: Basic

This is part of a full-day course on digital libraries, at the end of which attendees should become able to participate in design, development, evaluation, and standardization efforts related to the global movement toward digital libraries. This session, Part I, will focus on concepts and technology from the multimedia, information retrieval, hypertext, and electronic publishing fields that relate to digital libraries (DLs) - using real case studies and examples to provide a suitable context. Projects included relate to CS (ACM literature, technical reports, courseware), material science (TULIP), and graduate education (electronic theses and dissertations), as well as the NSF/ARPA/NASA Digital Library Initiative.

Our "perspective" approach will deal with DLs regarding: user and social needs; interfaces and user interaction; architectures, components, protocols; content, publishing, and capture; and systems, engines, and operations. Issues of scalability and sustainability will be explored.

This course also can serve as a stand alone course on the underlying technology for digital libraries, especially information retrieval, hypertext and electronic publishing.

Organizer:

Dr. Edward A. Fox holds a Ph.D. and M.S. in Computer Science from Cornell University, and a B.S. from M.I.T. Since 1983 he has been at Virginia Tech (VPI&SU), where he serves as Associate Director for Research at the Computing Center, and Professor of Computer Science. Current research projects include "Interactive Learning with a Digital Library in Computer Science" as well as several building a digital library of theses and dissertations. Formerly editor-in-chief of ACM Press Database Products, chair of ACM SIGIR, and Program Chair for ACM Digital Libraries'96, he edited the "Sourcebook on Digital Libraries" in 1993, three special issues of CACM, and has written widely in the information retrieval, electronic publishing, multimedia, and digital library fields. He has given 27 courses or short courses since 1988.

Lecturer:

Robert M. Akscyn
President Knowledge Systems
Export, PA

MP1

Monday, November 18
2:00-5:30pm
The DAVIC Model for Interactive Television Systems
Course Level: Intermediate

DAVIC (Digital Audio Visual Council) is an international consortium formed by more than 200 companies for the purpose of developing interoperability specifications for digital audio-visual services such as interactive television. This course reviews the end-to-end DAVIC architecture, and provides a discussion of MHEG-5 and MPEG DSM-CC which are being adopted as part of the DAVIC 1.0 specification.

The DAVIC 1.0 specification consists of twelve parts, including an end-to-end reference model, service provider

reference model, and delivery system reference model. Important components of the DAVIC architecture are MHEG-5 content model and MPEG-2 DSM-CC client-server protocol for session management and service access. The course will provide an overview of DAVIC, and will highlight MHEG-5 and DSM-CC. It will also compare these technologies with Internet and Web activities.

Organizer and Lecturer:

Dr. John F. Buford is Associate Professor of Computer Science and Director of the Distributed Multimedia Systems Lab at the University of Massachusetts Lowell. He has more than thirty-five publications including the book Multimedia Systems (ACM Press & Addison-Wesley, 1994). Dr. Buford has been active in international standards committees since 1991. He has presented courses on multimedia computing and systems to audiences in the US, Europe, Japan, and Australia.

MP2

Monday, November 18
2:00-5:30pm
Building and Applying Digital Libraries II: Research
Course Level: Intermediate

This is part of a full-day course on digital libraries, at the end of which attendees should become able to participate in design, development, evaluation, and standardization efforts related to the global movement toward digital libraries. This session, Part II, will focus on research and development, including principles and guidelines for design of scalable, sustainable DLs.

Our "source" approach will review collections of information about DLs (e.g., publications, workshops, D-Lib Magazine, other WWW sites), and survey important DL projects worldwide, so attendees become able to gauge such efforts in terms of capabilities for: publishing, capturing, naming, describing metadata, indexing, cataloging, archiving, authenticating, managing intellectual property rights, searching, browsing, retrieving, converting, (re-)using, linking, and organizing.

The final hour will engage attendees in group efforts (with instructor supervision) for specifying requirements and developing alternative designs for: a networked digital library of theses and dissertations (that will include text, multimedia and hypertext structures) or other student-chosen applications. Extensive online WWW pages will provide reference material during and after the courses.

Organizer:

Dr. Edward A. Fox holds a Ph.D. and M.S. in Computer Science from Cornell University, and a B.S. from M.I.T. Since 1983 he has been at Virginia Tech (VPI&SU), where he serves as Associate Director for Research at the Computing Center, and Professor of Computer Science. Current research projects include "Interactive Learning with a Digital Library in Computer Science" as well as several building a digital library of theses and dissertations. Formerly editor-in-chief of ACM Press Database Products, chair of ACM SIGIR, and Program Chair for ACM Digital Libraries'96, he edited the "Sourcebook on Digital Libraries" in 1993, three special issues of CACM, and has written widely in the information retrieval, electronic publishing, multimedia, and digital library fields. He has given 27 courses or short courses since 1988.

Lecturer:

Robert M. Akscyn
President Knowledge Systems
Export, PA

TAP1

Tuesday, November 19
9:00am-5:30pm
Graphic Design for Multimedia User Interfaces
Course Level: Intermediate

This course will provide proven concepts and techniques for effective, information-oriented design of user interfaces. Many visual examples, including detailed case studies, will provide concrete examples and practical guidelines of use of color, symbolism, layout, organization of content, metaphorical references, navigational strategies, and information visualization. The following items will be addressed: What is a user interface? Metaphors, Mental model, Navigation, Appearance, Interaction, Data visualization. Designing for multiple cultures, ages, genders, nationalities, User interface design process. Issue will be discussed in terms of the following case studies: American Airlines SABRE Online Travel Information Network, American Airlines Wayfinder Training Game, Oracle Online Mentor: Designing Effective GUI Applications CBT, DTIC: Golden Gate Online Tutorial for Database Searching, Oracle Online Mentor: CBT GUI Design Standards, Prodigy Corporate GUI Design Standards, and Random House New Media CD-ROM Titles.

Organizer and Lecturer:

Aaron Marcus is a leading designer of user interfaces, multimedia, and online services. His career in computer graphics and graphic design spans 25 years, and his firm Aaron Marcus and Associates, Inc. (AM+A) in Emeryville, California, has helped design award-winning products for 13 years. Mr. Marcus has written or co-written four books, including Graphic Design for Electronic Documents and User Interfaces, and the Cross-GUI Handbook. He has presented courses around the world at major conferences and corporate sites since 1990.

TAP2

Tuesday, November 19
9:00am-5:30 pm
Multimedia Networking: Principles and Protocols
Course Level: Intermediate

In this short course we will study the current trends in high-speed multimedia networking technologies. First, we will examine how multimedia traffic can be supported over a local area network with a simple ring or bus topology. Then, we will examine the design challenges for supporting real-time traffic and bursty data traffic over global networks, such as, ATM and the Internet, with arbitrary topology. We will study various possible routing and traffic management techniques for integrating both types of traffic sources on such networks. In addition we will discuss higher layer protocols for real-time traffic in ATM and the Internet, such as, SRTS, NTP, RTP, RTCP and RSVP.

In particular, we will study traffic management methods for:

- Real-time sources:
    1. rate control at the network's boundaries (e.g., leaky bucket),
    2. scheduling and traffic shaping with local timing (e.g., deadline scheduling, priority queueing),
    3. pseudo-isochronous cell switching in ATM, and
    4. time-driven priority on the global Internet with GPS-based synchronization, and
- Bursty data sources:
    1. rate-based flow control in ATM for ABR traffic,
    2. credit-based flow control,
    3. "Hot potato" and deflection routing, and
    4. deflection with convergence routing.

Organizer and Lecturer:
Yoram Ofek received his B.Sc. degree in electrical engineering from the Technion-Israel Institute of Technology in 1979, and his M.Sc. and Ph.D. degrees in electrical engineering from the University of Illinois-Urbana in 1985 and 1987, respectively.

From 1979 to 1982 he was affiliated with RAFAEL, as a research engineer. During 1983-1984 he was at Fermi National Accelerator Laboratory, Batavia, Illinois, and from 1984 to 1986 he was with Gould Electronics, Urbana, Illinois. Since 1987 he has been a research staff member at the IBM T. J. Watson Research Center, Yorktown Heights, New York. His main research interests are routing and multicast, flow-control and fairness in local and wide area networks, optical networks, distributed algorithms and self-stabilization, parallel computer architectures and fault tolerance, real-time and clock synchronization.

Dr. Ofek was the program co-chairperson of the 6th and chair of the 7th IEEE Workshop on Local and Metropolitan Area Networks. In IBM Dr. Ofek has initiated and led the research activities on ring LANs with spatial bandwidth reuse, switch-based LANs, and the use of synchronization for ensuring quality of service (QoS) in global networks like ATM and the Internet.

TA1

Tuesday, November 19
9:00am-12:30pm
Image and Video Databases
Course Level: Intermediate

The power of multimedia systems originates in the fact that disparate information can be represented as a bit stream. This is a big advantage because every form of representation, from video to text, can be stored, processed, and communicated using the same device: a computer. Better tools to produce and manage data, combined with the natural human desire for information, has resulted in a tremendous data explosion. In most cases, including web-surfing, this has resulted in tremendous data overload. Keyword-based systems are very limited, particularly for images and videos. Keywords provide more information about the person who enters the keywords than about the image itself. Content-based access to data is becoming essential in many applications.

This course will address issues in image and video databases. We will discuss basic issues in designing multimedia information systems. Data models for representing multimedia information at several abstraction levels will be introduced. Nature of queries and interfaces will be explored and suitable architecture to acquire and process multimedia information will be discussed. We will discuss desirable features in multimedia information systems by considering concrete examples. We will briefly review the state of the art in this emerging field. We will present examples of a working system from Virage on a computer in the course. Using Virage's system different aspects of image and video databases will be explained in hands-on practical manner.

Organizer and Lecturer:

Ramesh Jain is currently a Professor of Electrical and Computer Engineering, and Computer Science and Engineering at University of California at San Diego. Before joining UCSD, he was a Professor of Electrical Engineering and Computer Science, and the founding Director of the Artificial Intelligence Laboratory at the University of Michigan, Ann Arbor, MI 48109. His current research interests are in multimedia information systems, image databases, machine vision, and intelligent systems. He was the founder and the Chairman of Imageware Inc., an Ann Arbor based company dedicated to revolutionize software interfaces for emerging sensor technologies. He is the founding chairman of Virage, a company developing systems for visual information retrieval.

Ramesh is a Fellow of IEEE, AAAI, and Society of Photo-Optical Instrumentation Engineers, and member of ACM, Pattern Recognition Society, Cognitive Science Society, Optical Society of America, and Society of

Manufacturing Engineers. He has been involved in organization of several professional conferences and workshops, and served on editorial boards of many journals. Currently, he is the Editor-in-Chief of IEEE Multimedia, andis on the editorial boards of Machine Vision and Applications, Pattern Recognition, and Image and Vision Computing. He received his Ph.D. from IIT, Kharagpur in 1975 and his B.E. from Nagpur University in 1969.

TP1

Tuesday, November 19
2:00-5:30pm
Large Scale Hypermedia Information Management
Course Level: Intermediate

The aim of this course is to examine the problems associated with large scale multimedia information delivery and management using hypermedia systems.

Hypermedia technology has reached the stage of providing excellent access to distributed multimedia, in particular through the World Wide Web. However, application developers are still faced with many problems when dealing with large-scale systems, such as the authoring effort required to create all the appropriate links, the maintenance of link integrity during the re-organization of large structures and hypermedia linking to and from third party data.

Link management is crucial to maintaining control of large scale hypermedia projects. The course will consider various methods, including use of structured documents and separate databases of links.

The course will consider the meaning of the term "open" as applied to hypermedia systems, and will examine currently available systems including The World Wide Web and Hyper-G as well as the Microcosm system which was developed by the Multimedia Group at the University of Southampton specifically for managing large scale hypermedia resources.

Case studies in historical archives, delivering educational material, engineering documentation and electronic publishing, will be used throughout to illustrate the principles covered by the course.

Organizer:

Hugh Davis BSc MSc PhD MBCS is a Lecturer in Computer Science at the University of Southampton and was a founder member of the Microcosm project. He has been project manager for the past four years and in this capacity has worked closely with a number of projects that are using Microcosm as a basis for multimedia information system development. His research interests include the design and application of open hypermedia systems.

Lecturer:

Wendy Hall, Department of Electronics and Computer Science, University of Southampton, UK

Wendy Hall is Professor of Computer Science at the University of Southampton, UK. She is Director of the Multimedia Research Group in the Department of Electronics and Computer Science at Southampton and also co-directs the University's Teaching and Learning Technology Project and the recently established Digital Libraries Research Centre. Her research interests include the development of multimedia information systems and their applications in education, industry and commerce, multimedia publishing and multimedia information retrieval. Her group developed the open hypermedia system, Microcosm, which is now being commercially exploited through Multicosm Ltd.

Workshops

ACM Multimedia '96 is proud to host five full-day, in-depth workshops on topics of interest to the multimedia research community. Further information on all these workshops is available from the Workshops page of the ACM Multimedia '96 Web site at http://www.acm.org/sigmm/MM96/.

Although workshop participation is by invitation, most still have slots available. So if you see a workshop in which you would like to participate, please contact the workshop organizers directly for details. Please note that all workshop attendees are expected to register for the conference and must in addition pay a workshop fee of $50 on the day of the workshop. Take advantage of this unique opportunity to get the most out of ACM MultiMedia '96!

Wayne Wolf
Department of Electrical Engineering
Princeton University
Workshops Chair

Workshop 1

Tuesday, November 19
9:00am-5:30pm
Courseware, Training, and Curriculum in Multimedia
Organizer: Edward A. Fox, Virginia Tech

This workshop---for educators, trainers, and employers of those who wish to work in the multimedia field---will begin the process of developing curricula, courses, training materials, courseware, etc., suitable for worldwide use. It will target undergraduate, masters, and Ph.D. levels and span the range from focused training needs to introductory courses to concentrations or full programs. The workshop will include both small group discussions of particular issues as well as full-group discussions of multimedia curricula. Demonstrations will be included. We urge attendance of all interested teachers, researchers, artists, and those hiring in multimedia industries.

Contact:
Prof. Edward Fox
Dept. of Computer Science
600 McBryde Hall
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Phone: +1-540-231-5113
Fax: +1-540-231-6075
fox@vt.edu

Workshop 2

Tuesday, November 19
9:00am-5:30pm
(Multi)Media Processors and Embedded Systems:
System Architectures and Applications
Organizer: P. A. Subrahmanyam, Bell Labs

Multimedia applications include the emerging set of Internet-based applications, as well as the more traditional applications such as videoconferencing, video on demand, interactive games, education, set-top boxes, digital

libraries, databases and many others. Applications can be characterized along many axes: performance requirements (both absolute compute horsepower and real time constraints); memory bandwidth; interfacing requirements; standards; preferred/available software development paradigms; and hardware and operating system support. This workshop is intended to focus on the interactions between: computational/interface requirements of existing and emerging multimedia applications; operating system kernel support for multimedia software development; hardware support for such applications and software; and system-level design tools. The workshop will consist of a set of talks, interspersed with discussion and panel sessions.

Contact:
Dr. P.A. Subrahmanyam
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Phone: +1-908-949-5812
Fax: +1-908-949-9118
subra@research.bell-labs.com

Workshop 3

Thursday, November 21
9:00am-4:00pm
Interactive Narrative
Organizers: Timothy Garrand, New England College; Monika Fleischmann, GMD

An interactive narrative uses many techniques and possibilities to allow each user of the multimedia program to discover or co-author a story in a unique way. The extension of narrative through interactivity is less a disruption of tradition and more an incitement to reflect on the conditions of contemporary experience.

The panelists and participants will examine interactive narrative from a variety of different perspectives including: techniques of successful designers of interactive narratives; a toolbox of historical and psychoanalytical theories of narrative; comparisons with classical cinema; design issues in non-linear narratives; explorations of 3-D organizations of narratives. The workshop will include presentations, demonstrations, and discussions.

Contacts:
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Monika Fleischmann
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Phone: +49-2241-14-2809
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fleischmann@gmd.de

Workshop 4

Friday, November 22
9:00am-5:30pm
Digital Video Libraries and Interoperability
Organizer: Craig Marcus, CMU

This workshop will act as a working group meeting for video/multimedia library research---both established groups and those with a newfound interest in video libraries. The morning will be devoted to presentations by various research groups about their current systems and future plans. Presentations could include information relevant to the model or structure of the library exported to client applications as well as descriptions of the client interactions with the library. The afternoon will be devoted to a group discussion of interoperability issues. Interoperability is a key usability issue in video libraries. The discussion should help illuminate many important issues in video library architecture and possibly spark several joint interoperability experiments between existing libraries/clients.

Contact:
Craig Marcus
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Carnegie Mellon University
5000 Forbes Ave.
Pittsburgh PA 15213-3890
Phone: +1-412-268-8970
neek+interop@cs.cmu.edu

Workshop 5

Friday, November 22
9:00am-5:30pm
Using Multimedia Assessment Tools
Organizer: Geri Gay, Cornell University

We have only just begun to understand and appreciate the multiple ways in which a multimedia educational system influences or enhances student learning. A major challenge in assessing the impact of learning technologies relates to the difficulty of gathering, organizing, and presenting useful data in collaborative multimedia environments. Technologically-rich environments demand equally rich data collection and analysis tools---ones capable of examining human-computer interactions as well uses of multiple representations of information. These technologies not only allow evaluators and researchers to gather data from the systems being used, they allow integration of other data as well---observations, interviews, video and audio records, documents produced, and more. The technologies also support researchers as they analyze the data and develop their interpretations of the use of the systems. The goal of this workshop is to examine the uses of multimedia assessment tools in order to understand how well multimedia technologies influence learning. The workshop will include demonstrations of systems ranging from simulations to digital libraries and museums will be demonstrated. A series of multimedia assessment tools and analysis techniques will be discussed during the workshop by people from diverse backgrounds (researchers, developers, multimedia publishers, librarians, foundation officers).

Contact:
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Technical Papers

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Boston University

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- John Buford, University of Massachusetts at Lowell
- Shih-Fu Chang, Columbia University
- Wolfgang Effelsberg, University of Mannheim
- Carole Goble, Manchester University
- Jorge Haake, GMD-IPSI
- Wolfgang Klas, GMD-IPSI
- Wendy Mackay, University of Paris
- Klara Nahrstedt, University of Illinois at Urbana-Champaign
- Roy Rada, University of Liverpool
- Ian Ritchie, Heriot-Watt University/British Computer Society
- Brian Smith, Cornell University
- Dan Swinehart, Xerox Palo Alto Research Center
- Yuzuru Tanaka, Hokkaido University
- William Tetzlaff, IBM Thomas J. Watson Research Center
- Hirotada Ueda, Hitachi Denshi, Ltd.
- Harrick Vin, University of Texas at Austin
- HongJiang Zhang, HP Labs
- Hui Zhang, Carnegie Mellon University

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- Peter Bosch, CWI and University of Twente
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- Florian Brody, New Media Consulting, Vienna and Art Center College of Design
- M. Cecelia Buchanan, Washington State University

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- Isabel Cruz, Tufts University
- Asit Dan, IBM Research, Yorktown Heights
- Glorianna Davenport, MIT Media Lab
- Hugh Davis, University of Southampton (and Multicosm Ltd)
- Michel Diaz, LAAS du CNRS
- George Drapeau, SunSoft
- David H.C. Du, University of Minnesota
- Fabrice Dupuy, France Telecom CNET
- Alexandros Eleftheriadis, Columbia University
- J. Robert Ensor, Lucent Technologies, Bell Labs J
- ulio Escobar, SENACYT
- Seongbae Eun, Han Nam University
- Steven Feiner, Columbia University
- Jim Foley, Mitsubishi Electric Research Labs
- Edward A. Fox, Viginia Tech
- Borko Furht, Florida Atlantic University
- JJ Garcia-Luna-Aceves, University of California at Santa Cruz
- Franca Garzotto, Politecnico di Milano
- D. James Gemmell, Microsoft
- Arif Ghafoor, Purdue University
- Athula Ginige University of Technology, Sydney
- Forouzan Golshani, Arizona State University
- Bill Grosky, Wayne State University
- Venkat N. Gudivada, Ohio University
- Yechezkal-Shimon Gutfreund, GTE Laboratories
- Rei Hamakawa, NEC Corporation
- Lynda Hardman, CWI
- Rune Hjelsvold, Siemens Corporate Research
- Jau-Hsung Huang, National Taiwan University
- Jim Huang, Honeywell Technology Center
- Barry J. Hudson, Westinghouse Savannah
- John Ibbotson, Applied Science and Technology, IBM UK Ltd
- Hiroshi Ishii, MIT Media Lab
- Kevin Jeffay, University of North Carolina at Chapel Hill
- C. R. Kalmanek, AT&T Research
- Dilip Kandlur, IBM Watson Research Center
- Ahmed Karmouch, University of Ottawa
- Randy H. Katz, UC Berkeley
- Bhumip Khasnabish, GTE Labs
- Martin Kienzle, IBM Watson Research Center
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- Willard Korfhage, Polytechnic University
- Paul H. Lewis, University of Southampton

- Li Li, Bell-Northern Research
- Peiya Liu, Siemens Corporate Research
- David Lowe, Undiversity of Technology, Sydney
- Bryan Lyles, Xerox PARC
- Fillia Makedon, Dartmouth College
- Elizabeth Mynatt, Xerox PARC
- Bernard Merialdo, Institut EURECOM
- Vicki de Mey, Salamander Interactive
- Ethan V. Munson, University of Wisconsin-Milwaukee
- A. Desai Narasimhalu, Institute of System Science, National University of Singapore
- Erich Neuhold, GMD Dharmstadt
- Kingsley C. Nwosu, Lucent Technologies (AT&T Bell Labs.)
- Max Ott, C&C Research Labs, NEC USA
- Giovanni Pacifici, IBM T.J. Watson Research Center
- Beverly Park Woolf, University of Massachusetts at Amherst
- Garry M. Paxinos, Metro Link Inc. and Florida Center for Electronic Communication
- Alex (Sandy) Pentland, MIT Media Lab
- Maria Jose Perez-Luque, University of Navarra
- Tom Pfeifer, Technical University of Berlin/GMD-FOKUS
- Steve Pink, SICS
- George C. Polyzos, University of California, San Diego
- Nikos B. Pronios, INTRACOM S.A.
- Srinivas Ramanathan, Hewlett-Packard Laboratories
- P. Venkat Rangan, University of California at San Diego
- Samuel A. Rebelsky, Dartmouth College
- Dave Redell, DEC Systems Research Center
- Kurt Rothermel, University of Stuttgart
- David De Roure, University of Southampton
- Larry Rowe, UC Berkeley
- Pierre de Saqui-Sannes, ENSICA
- Chris Schmandt, MIT Media Lab
- Eve Schooler, Caltech
- Stan Sclaroff, Boston University
- Behzad Shahraray, AT&T Research
- Morris Sloman, Imperial College of Science Technology and Medicine
- Gerard J.M. Smit, University of Twente
- Stephen W. Smoliar, FX Palo Alto Laboratory, Inc.
- Cormac J. Sreenan, Bell Laboratories
- Ralf Steinmetz, Technical University of Darmstadt
- Scott M. Stevens, Software Engineering Institute, Carnegie Mellon University
- Jay Strosnider, Carnegie Mellon University
- Kazuo Sugihara, University of Hawaii at Manoa
- Maria Theodoridou, CWI and FORTH
- Jonathan Walpole, Oregon Graduate Institute of Science & Technology
- Sylvia Wilbur, Queen Mary & Westfield College
- Michael Wilson, Rutherford Appleton Laboratory
- Michael Wynblatt, Siemens Corporate Research
- Raj Yavatkar, Intel
- James C. Yee, Philips Research Palo Alto
- Polle Zellweger, Xerox PARC
- Lixia Zhang, Xerox PARC
- Wei Zhao, Texas A&M University
- Taieb Znati, University of Pittsburgh
- Michael J. Zyda, Naval Postgraduate School

The Program Chairs gratefully acknowledge the effort and expertise provided by the extended members of the Program Committee. These individuals, not listed here, will be recognized in the Conference Proceedings.

1A
Wednesday, November 20
11:00am-12:30pm
Multimedia Analysis
Session Chair: Brian Smith, Cornell University

A Shot Classification Method to Select Effective Key-Frames for Video Browsing
Hisashi Aoki, Shigeyoshi Shimotsuji and Osamu Hori
Research and Development Center, Toshiba Corporation

Indexing and Retrieval of Digital Video Sequences Based on Automatic Text Recognition
Rainer Lienhart
University of Mannheim

Automatic Audio Content Analysis
Silvia Pfeiffer, Stephan Fischer and Wolfgang Effelsberg
University of Mannheim

1B
Wednesday, November 20
11:00am-12:30pm
Authoring I
Session Chair: John Buford, University of Massachussets, Lowell

A Multimedia System for Authoring Motion Pictures
Ronald Baecker, Alan J. Rosenthal, Naomi Friedlander, Eric Smith and Andrew Cohen
University of Toronto

CVEPS-A Compressed Video Editing and Parsing System
Jianhao Meng and Shih-Fu Chang
Columbia University

Negotiation for Automated Generation of Temporal Multimedia Presentations
Dalal,M. and Feiner, S. and McKeown, K. and Pan, S. and Zhou, M. and Hollerer, T. and Shaw, J. and Feng, Y. and Fromer, J.
Columbia University

2A
Wednesday, November 20
2:00-3:30pm
Image Parsing
Session Chair: Wolfgang Effelsberg, University of Mannheim, Germany

Comparing Images Using Color Coherence Vectors
Greg Pass, Ramin Zabih and Justin Miller
Cornell University

MMVIS: Design and Implementation of a Multimedia Visual Information Seeking Environment
Stacie Hibino and Elke A. Rundensteiner
University of Michigan

VisualSEEk: A Fully Automated Content-Based Image Query System
John R Smith and Shih-Fu Chang
Columbia University

2B
Wednesday, November 20
2:00-3:30pm
System Building
Session Chair: Dan Swinehart, Xerox Palo Alto Research Center

On-Demand Regional Television over the Internet
Haakon Bryhni, Hilde Lovett, Erling Maartmann-Moe, Dag Solvoll and Tryggve Sorenson
Norwegian Computing Centre

A Centralized Audio Presentation System
Albert L. Papp III and Meera M. Blattner
University of California, Davis, and Lawrence Livermore National Laboratory

Transport QoS Programmability
Andrew Campbell and Geoff Coulson
Columbia University and Lancaster University

3A
Wednesday, November 20
4:00-5:00pm
Scheduling and Synchronization
Session Chair: Hui Zhang, Carnegie Mellon University

Adaptive Rate-Controlled Scheduling for Multimedia Applications
David K.Y. Yau and Simon S. Lam
University of Texas at Austin

Proving Temporal Consistency in a New Multimedia Synchronization Model
J.P. Courtiat and R.C. De Oliveira
LAAS/CNRS

3B
Wednesday, November 20
4:00-5:00pm
Applications
Session Chair: Hirotada Ueda, Hitachi Denshi, Ltd.

Image Compositing System Capable of Long-Range Camera Movement
Masaki Hayashi, Kazuo Fukui and Yasumasa Ito
NHK Science and Technical Research Labs

'Smart Clothing': Turning the Tables (Privacy and Personal Empowerment through wearable Multimedia and Wireless Communications)
Steve Mann
MIT Media Lab

4A
Thursday, November 21
9:00-10:30am
Groupware

Session Chair: Jorge Haake, GMD-IPSI

Meme Media and a World-Wide Meme Pool
Yuzuru Tanaka
Hokkaido University

Teaching and Learning as Multimedia Authoring
Gregory D. Abowd, Chris Atkenson, Amy Feinstein, Rob Kooper, Sue Long, Scott Register, Nitin "Nick" Sawhney and Mikiya Tani
Georgia Institute of Technology

CU-SeeMe VR Immersive Desktop Teleconferencing
Jefferson Han and Brian Smith
Cornell University

4B
Thursday, November 21
9:00-10:30am
Coding
Session Chair: Shih-Fu Chang, Columbia University

A JPEG Codec Adaptive to Region Importance
Jiying Zhao, Yoshihisa Shimazu, Koji Ohta, Rina Hayasaka and Yutaka Matsushita
Keio University

Methods for Encrypting and Decrypting MPEG Video Data Efficiently
Lei Tang
GSIA, Carnegie Mellon University/ Oracle Co

Adaptive Foveation of MPEG Video
T.H. Reeves and J.A. Robinson
University of Waterloo and University of Newfoundland

5A
Thursday, November 21
2:00-3:30pm
User Interfaces
Session Chair: Yuzuru Tanaka, Hokkaido University

Vibrotactile Feedback in Delicate Virtual Reality Operations
Li-Te Cheng, Rick Kazman and John Robinson
University of Waterloo and University of Newfoundland

A Quality Planning Model for Distributed Multimedia in the Virtual Cockpit
Mark Claypool and John Riedl
University of Minnesota

An Empirical Study of Attending and Comprehending Multimedia Presentations
Peter Faraday and Alistair Sutcliffe
City University, London

5B
Thursday, November 21
2:00-3:30pm
Servers

Session Chair: William Tetzlaff, IBM Thomas J. Watson Research Center

Segmented Information Dispersal (SID) for Efficient Reconstruction in Fault-Tolerant Video Servers
Ariel Cohen and Walter Burkhard
University of California

Adventures in Building the Stony Brook Video Server
Michael Vernick, Chitra Venkatramini and Tzi-cker Chiueh
State University of New York at Stony Brook

Disk Striping Strategies for Large Video-on-Demand Servers
Tat-Seng Chua, Jiandong Li, Beng-Chin Ooi, Kain-Lee Tan
National University of Singapore

Thursday, November 21
4:00-5:00pm
Award Papers

Session Chair: T.D.C. Little, Boston University and Wendy Hall, University of Southampton

Best Paper

Open-Vocabulary Speech Indexing for Voice and Video Mail Retrieval
M.G.Brown, J.T.Foote, GJF Jones, K.Sparck Jones and S.J.Young
Olivetti Research Ltd and Cambridge University

Best Student Paper

Do Story Agents Use Rocking Chairs? The Theory and Implementation of One Model for Computational Narrative
Kevin Brooks
MIT Media Lab

6A
Friday, November 22
9:00-10:30am
Authoring II
Session Chair: Roy Rada, University of Liverpool

A Framework for Supporting Multimedia Document Authoring and Presentation
K. Selcuk Candan, B. Prabhakran and V.S. Subrahmanian
University of Maryland

Anecdote: A Multimedia Storyboarding System with Seamless Authoring Support
Komei Harada, Eiichiro Tanaka, Ryuichi Ogawa and Yoshinori Hara
NEC Corporation

Sketching Multimedia Templates for Generating Hypermedia from Specifications
S. Fraisse, J. Nanard and M. Nanard
LIRMM, Montpellier France

6B
Friday, November 22

9:00-10:30am
Networks
Session Chair: Klara Nahrstedt, University of Illinois at Urbana-Champaign

The Case for Concurrent Reliable Multicasting Using Shared Ack Trees
Brian Neil Levine, David B. Lavo and J.J. Garcia-Luna-Aceves
University of California, Santa Cruz

Enhancing Network Services through Multimedia Data Analysers
Ferdinando Samaria, Harold Syfrig, Alan Jones and Andy Hopper
Olivetti Research Ltd

Rate Shaping by Block Dropping for Transmission of MPEG-Precoded Video over Channels of Dynamic Bandwidth
Wenjin Zeng and Bede Liu
Princeton University

Panels

Bob Allen
Bellcore
Morristown, NJ, USA
Panels Chair

Panel 1
Wednesday, November 20
11:00am-12:30pm
Selling Multimedia Goods and Services Over Broadband Networks

This panel addresses the opportunities and issues related to the use of broadband networks as an emerging channel for the sale and delivery of multimedia goods and services. The benefits and risks will be explored from the diverse perspectives of technology providers, multimedia systems researchers, media content providers, and the legal/regulatory communities.

Panelists:

- Moderator: Allan Kuchinsky, Hewlett Packard Laboratories
- Tom Wilkins, Hewlett Packard Laboratories
- Andrew Lippman, associate director at MIT Media Lab
- Suzanne Donino, Turner Entertainment Networks
- John Leitner, BYRNES

DESCRIPTION:

The convergence of several technological, social, and business trends has provided strong incentives for telecommunications providers and other entities to deliver rich, multimedia information services to customers' homes over their network infrastructures. Some influential trends are the increasing speed of network connectivity, penetration of powerful client PCs into the home, and the advent of standard protocols and easy-to-use browsing tools for networked, multimedia content. This has resulted in an explosion of demand for Internet and online service access in the home.

One area of strong interest has been the use of broadband networks for selling goods and services in ways that are potentially more effective than that provided via more traditional media, e.g. printed direct-mail catalogs. There are three reasons why broadband networks may provide a more powerful medium:

1. IMMERSION: broadband networks, with their high bandwidth, can deliver rich, multimedia content to the home, providing an immersive purchasing experience, fundamentally changing the way consumers can interact with information.
2. PRECISION: the network can be used to find out customers' preferences, providing more targeted delivery of advertising, promotional materials, and product information to customers who may be receptive. Likewise, the network can be used to find out information on the behalf of the consumer, for example gathering competitive price information.
3. UBIQUITY: facilities such as the World Wide Web can provide an international presence for a business, drastically extending the competitive reach of an enterprise, particularly for smaller ones.

Goods that can be represented digitally, for example music, photographic images, and videos, are particularly well-suited for sale and delivery over broadband networks. Technologies like the World Wide Web and writeable optical storage are acting as disruptive forces within these and other industries. Cost models are being redefined and global competition is driving a phenomenon of "dis-intermediation", where the distribution channel between producer and consumer is increasingly direct and intermediaries in the distribution process are eliminated. For example, music publishers can sell directly to consumers, eliminating the record store as a distribution point. Expanding upon this, there is also the potential for recording artists to sell directly to their fans, eliminating the music publisher as a distribution point.

While there is great opportunity for new revenues, there are also a number of impediments that need to be overcome if these new models of networked retailing are to take root. Technical issues that need to be addressed include:

- end-to-end system performance in a complex, distributed environment.
- management of network bandwidth in both upstream and downstream directions, particularly where bandwidth is assymetrical.
- network and system fault management.
- support for the creation, deployment, and modification of services and content.
- multimedia asset management.
- human interface issues, both for producers and consumers of multimedia goods and services.

Additionally there are a number of difficult issues related to the business models and to the legal and regulatory framework within which these services will be deployed. These issues include:

- management of property rights (copyright, trademark, licensing/royalties)
- editorial/policy controls over copyrighted materials, e.g. concerns over offensive materials provisions in the recent Telecommunications Act.
- support for targeted advertising. This is particularly difficult in the Internet environment, which conforms to a "pull" model of advertising, rather than the "push" model inherent in broadcast television and radio.
- administration of multimedia content, particularly in relation to pricing,billing, and allocation of revenues among producers and distributors.

There is a strong interplay between the technical and business issues and considerable controversy about how best to resolve them. This panel will explore these controversies and address the opportunities and issues from a diverse set of perspectives:

Tom Wilkins (Hewlett Packard Laboratories) will discuss the technology platforms and infrastructure that enable broadband delivery of multimedia goods and services. Technology trends for the home PC platform, various networking alternatives, and emerging user interface modalities, will be addressed. End-to-end system issues of performance, bandwidth management and multimedia asset management will be identified.

Andrew Lippman (MIT Media Lab) will discuss applications areas of particular promise for the future of consumer entertainment systems including the internet, television, movies, and computing in the house and on your person. He will address the ways in which computing will diffuse throughout diverse members of society and cultures throughout the world, to the very young, the very old, the infirmed, the rich and the poor. Sound and picture representations are a basis for this, as are innovations in interfaces and communications systems.

Suzanne Donino (Turner Entertainment Networks) will discuss the opportunities provided by alternative delivery channels for their extensive libraries of multimedia materials, as well as the issues they need to address in order to be able to achieve this. Issues include management of large, heterogeneous databases, protection of intellectual property, and administration of multimedia content.

John Leitner (BYRNES) will elaborate on the legal and regulatory issues relating to networked delivery of multimedia content and the impact of electronic commerce upon the global workforce. Is there any regulation, is it adequate, can it be regulated, can the legal owner of intellectual property transmitted by electronic means be protected and by whom. The application of these concerns as they apply to various sectors, ranging from multimedia to banking, from private enterprise to U.S. Customs and the World Customs Organization will be addressed.

FORMAT: The panel will emphasize the contrasts among the diverse viewpoints, as well as attempt to identify unanticipated synergies. A high degree of interaction is expected among the panelists and with the audience. The moderator envisions a brief presentation by each panelist (maximum 10 minutes), each followed by a brief period (maximum 5 minutes) for other panelists to pose questions and challenge assumptions. This will be followed by an opportunity for the audience to pose questions and challenge assumptions (maximum 30 minutes).

BIOGRAPHIES: Suzanne Donino
Senior Vice President Phone: (404) 885-4574
Turner Entertainment Networks (T.E.N.) email: suzanne.donino@turner.com
Network Operations Fax: (404) 885-4933
1050 Techwood Drive
Atlanta, GA 30318

Suzanne Donino, Senior Vice President of Network Operations for Turner Entertainment Networks is responsible for Turner Entertainment Networks' Broadcast Operations, Library Services, Log Management, Billboard Production, Program Edit, Satellite Operations, Advanced Network Operations, Promotional Planning, Closed Captioning and Project Scarlett (a cross-divisional computer software development). Turner Entertainment Networks consists of TBS (local and Superstation feeds), TNT, Cartoon Network, Turner Classic Movies, TNT Latin America and Cartoon Network Latin America. Suzanne was involved with the launches of and provides ancillary support to the off site operations of TNT/Cartoon Network Europe and TNT/Cartoon Network Asia. Prior to becoming Senior V.P. of Network Operations, Suzanne was Vice President of T.E.N. Network Operations. Early in her career with Turner, she assumed responsibility for many operational duties while handling the daily Traffic duties of commercial order clearance for Turner Broadcasting System. She has been working for Turner Broadcasting System, Inc. for twelve years.

Prior working for Turner Broadcasting System, Suzanne's work experience included Traffic Manager for Lifetime (formerly the Cable Health Network), Account Supervisor for B-W Advertising in Phoenix, Arizona and Traffic Manager for KTVK-TV in Phoenix, Arizona.

Tom Wilkins
Hewlett Packard Laboratories Phone: (415) 857-8566
1501 Page Mill Road email: wilkins@hpl.hp.com
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Tom Wilkins is a Project Manager for Hewlett-Packard Labs in Palo Alto, Ca. Tom has been involved in the

development of interactive environments for the last 8 years as R&D manager for HP's worldwide interactive communications and education network. He has served on the United States Distance Learning Association's board of directors for the last 3 years and has participated in technical designs for communications systems for university and industrial environments Tom was recently inducted into the Distance Learning Hall of Fame for influencing the development of the distance learning industry. The HP network he created received an award for corporate training environments in telecom XII. Tom has been a speaker at numerous industry events and has been featured in industry and national magazines, most recently by Forbes on just-in -time information. Tom has been with HP for over 16 years and holds a BBA in Operations Research, an MBA and technical certificate in Broadcast Engineering.

Andrew Lippman
Associate Director,
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Andy Lippman has spent the past 27 years at MIT in capacities ranging from undergraduate to associate professor. He is currently Associate Director of the Media Laboratory and is directly responsible for research programs in the lab addressing the future of television, movies, consumer entertainment systems, and multimedia workstations. In recent years, his work has concentrated on digital representations of moving image sequences for compression, interaction and analysis as well as the systemic considerations of image communication systems ranging from HDTV to desktop movies. He has participated in congressional and international meetings on communications, American competitiveness and the future of television.

In the past, he directed the Architecture Machine Group and gained some notoriety for the development of an early interactive videodisc system, the Movie-Map, which enabled viewers to literally pre-experience a trip to Aspen, Colorado via a video personal computer. Later work included the "Movie-Manual" an electronic book written individually for each reader as it was being read, and research programs in teleconferencing, news information, and personalized publishing. He has been published widely and made over one hundred presentations, for technical and lay audiences, on interactivity, high definition television, personal communications and entertainment in the next century.

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John Leitner is a spokesman, lecturer and educator on international trade issues in the United States and overseas. He is author of training videos, textbooks, and editorials, and is a recognized leader in the international trade community. He Chairs the Transport Documents Committee which works with the United States Council on International Banking (USCIB) in developing the internationally accepted rules for documentary credits. He also Chairs the Facilitation Committee, a council to coordinate and reconcile issues among the various local, state, federal agencies, ports and private sector firms involved with international commerce. He is a Director & VP of the California Council for International Trade (CCIT). Mr. Leitner is licensed by the U.S.Department of the Treasury, Customs Service. In 1978 he was appointed by the Secretary of Commerce to the Export Council, a position he still holds while being CEO of byrnes, a collection of professional services for global redistribution since 1907.

Allan Kuchinsky (moderator)
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Allan Kuchinsky is a Research Scientist at Hewlett Packard Laboratories in Palo Alto, California. His current work focuses upon software application architectures for broadband residential information systems. Previous work includes management of research into collaborative multimedia systems, active electronic mail systems, and applied artificial intelligence tools. Prior to his work HP Labs, Allan worked on VLSI CAD tools for the HP internal design community. This included a procedural layout system (ICPL) for VLSI module generation and an experimental knowledge-based circuit area estimation tool. Allan holds a BA degree in Psychology from Brooklyn College and an MS degree in Computer Science from University of Arizona.

Panel 2
Wednesday, November 20
2:00-3:30pm
Principled Design of Multimedia In Education and Training: The Role of Cognitive Theory

Multimedia has become invaluable in education and training systems. The panel will discuss research issues regarding interactive multimedia for education and training. Demonstration of working systems will be shown. The following issues will be addressed:

- What is the potential for multimedia training systems?
- Can we do better than page turning graphics?
- What is the direction of Multimedia Systems in Education?
- How can we organize information for ease of access and application?
- What network and software technology is needed for educational multimedia systems?

Panelists:

- Moderator: Helen Gigley, Office of Naval Research
- Patricia Baggett, New Mexico State University
- Beverly Woolf, University of Massachusetts
- Mark Guzdial, Georgia Institute of Technology
- Robert Kozma, SRI International
- Mary Hegarty, University of California
- Robert Miyamoto, University of Washington
- Hari Narayanan, Georgia Institute of Technology

Panel 3
Wednesday, November 20
4:00-5:30pm
Getting Control of our Media: Multimedia Scripting Languages

Embedded scripting languages play an important role in today's multimedia authoring environments. While these environments also support direct manipulation and timeline editing tools that are very useful for creating movie-like presentations, scripting languages are irreplaceable when creating a multimedia document that must respond to user's actions and commands in complex and intriguing ways. Only with a scripting language is it possible to make a button or "hot spot" behave differently depending on the user's earlier behavior. Scripting languages have a long history which began with control languages embedded in text editors. All are intended to ease the production of multimedia documents with complex interactive behavior, but their designs are quite diverse. This panel will discuss the design choices in existing multimedia scripting languages, the forces that influence scripting language design, and the directions in which these languages will be headed in the future.

Panelists:

- Moderator: Ethan Munson, UW-Milwaukee
- Guy Steele, Sun
- John Thompson, Macromedia
- Brian Dennis, UC Berkeley
- Brian Markey, Permanent Wave Productions

Joint Panel with SPIE
Wednesday, November 20
6:30-8:00pm

Convergence in the 21st Century: Communications, Multimedia, and Computing

What are the technical problems confronting the engineer in the 21st Century regarding the World Wide Information Age? Many of the experts in the field of video, communications computer technologies and multimedia believe that their respective fields are rapidly merging. What kind of world will it be? Will it really happen? When?

Some of the key topics to be explored are:

- Assessment of the furture of communication and computation
- The status of delivery systems and networks
- The predicted domimnant mode processing systems
- The role of standards
- Are there technology limitations
- Will we ever have enough bandwidth
- Cultral and social implications
- The role of 'intelligent' systems

Panelists:

- Moderator: Lee McKnight, MIT Center for Technology, Policy, and
- Industrial Development
- Micheal Bove, MIT Media Lab
- Steve Casselman, Virtual Computer Corp.
- Michael Lesk, Bellcore
- Nick Tridennick, Editor Microporcessor Report
- John Watson, Xilinx Inc.

Panel 4
Thursday, November 21
9:00-10:30am
Storytelling after Cinema I

Panel 5
Thursday, November 21
11:00am-12:30pm
New Art Venues

Is the gallery venue over? Telematic arts such as teleconferencing & internet define new art venues in

themselves. The digital communicatons network is where art exists today. Cyber-/Space is not the final frontier, it's in your imagination.

This panel will discuss alternative concepts to the traditional museums. Is the "Museum of the Future" a telephone based installation? Is it in the net or is it just an 'intelligent' building to the traditional museum? The Ars Electronica Center in Linz or The Media Museum of The Center for Art and Technology in Karlsruhe will be discussed alongside network symposiums not simply to try out novel formats for an event, but to erect a permanent platform from which the debate/exhibition will constantly reach out to engage specific segments of the techno-cultural revolution. Does a cultural world-wide organization such as the Goethe Institute give a global platform for new networks?

Panelists:

- Contact: Monika Fleischmann, GMD-IMK, Sankt Augustin, Germany
- Paul Sermon, HGB Leipzig, Germany
- Hans-Peter Schwarz, ZKM, Karlsruhe, Germany
- Gerfried Stocker, Ars Electronica Center, Linz, Austria
- Lisa Corrin, The Contemporary, Baltimore
- Regina Wyrwoll, Goethe Institute, Muenchen, Germany <

Panel 6

Thursday, November 21

2:00-3:30pm

Virtual Environment Research and Applications: An Interdisciplinary Challenge

Virtual environment (VE) research and application construction is necessarily interdisciplinary and collaborative. Such collaborations have proven to be challenging and educational; they are challenging because it takes some time to learn the language and approach of different disciplines, and educational since one ends up learning a great deal about the other disciplines in order to collaborate successfully. These notions apply to many multimedia (MM) applications as well, and in fact, the line between VE and MM technology is quite often blurred. The panelists have all been involved in interdisciplinary VE research efforts. In particular, for the past year, all the panelists have been involved in a Navy-funded research effort to design and develop a VE training system with intelligent tutoring. The panelists will each discuss their approach to such a collaborative effort from their unique perspective, and their subsequent experiences as the project has evolved.

Panelists:

- Moderator: David Zeltzer, MIT Research Lab of Electronics)
- Walter A. Aviles, MIT
- Nathaniel I. Durlach, MIT
- Stewart Harris, Imetrix, Inc.
- Bruce Roberts, Bolt, Beranek and Newman, Inc.

Panel 7

Friday, November 22

9:00-10-30am

Storytelling After Cinema II

Panel 8

Friday, November 22
9:00-10:30am
Architecture, Time and Fragmentation

Registration Form
Multimedia '96
November 18-22, 1996

Please type or print clearly, Use one two-sided form for each registrant. Photocopy additional forms if necessary. Please fill out the demographic questions.

General Information

For up-to-date information about ACM Multimedia '96 refer to the World-Wide Web page: http://www.acm.org/sigmm/MM96/ or contact

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ACM
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Phone: +1-212-626-0605
Fax: +1-212-302-5826
E-mail:osteller@acm.org

Conference Registration Form

Full Name _____
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_____
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(You must fill in your member number to qualify for member rates.)

	Member		Non-Member		Student	
	By 10/18/96	After 10/18/96	By 10/18/96	After 10/18/96	By 10/18/96	After 10/18/96
Conference Only	$385	$455	$485	$555	$125	$195 $__

Does not include courses or workshops. Your conference registration includes print proceedings, admission to all conference sessions, SPIE exhibits, and evening function on Thursday.

Courses Only (Does not include conference. You MUST indicate course selections.)

	Member By 10/18	Non-member By 10/18	Member After 10/18	Non-member After 10/18
One half-day course	$240	$265	$285	$310
Multiple half-day courses	$185	$205	$220	$240

Number of half-day courses _____ x Price _____= $_____
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Payment Options:

Mail this form with payment to

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Cancellation Policy: Confirmed Registrants who cannot attend are entitled to a refund of paid fees less a $50 processing fee if a written request is received by us on or before October 18. After October 18, there are no refunds. Substitutions are welcome. For more information, call 800-524-1851 (in USA and Canada only) or 508-443-3330.

Course Selections

Please check those courses you plan to attend.

Full Day Courses

Monday
___ MAP1 Multimedia Enabling Technologies and Applications
___ MAP2 Systematic Design of Hypermedia Applications

Tuesday
___ TAP1 Graphic Design for Multimedia
___ TAP2 Multimedia Networking

Half Day Courses

Monday AM
___ MA1 Design Principles for Multimedia File Systems
___ MA2 Building and Applying Digital Libraries I: Introduction

Monday PM
___ MP1 The DAVIC Model for Interactive Television Systems
___ MP2 Building and Applying Digital Libraries II: Research

Tuesday AM
___ TA1 Image and Video Databases

Tuesday PM
___ TP1 Large Scale Hypermedia Information Management

Conference Sessions

Please list the code number of the conference session you plan to attend in each time slot. This information is used for room

planning purposes only and is non-binding

Wednesday
____ 11:00am-12:30pm _____ 2:00pm-3:30pm ____4:00pm-5:00pm

Thursday
_____ 9:00am-10:30am _____ 11:00am-12:30pm ____ 2:00pm-3:30pm

Friday
_____ 9:00am-10:30am _____ 11:00am-12:30pm

Do you have any special needs? (Please Specify)

To help us understand our attendees better, please complete the following questions:

Your professional title or occupation: (check only one)

__ President/owner/corporate executive
__ Software Developer/Analyst
__ Member of Technical Staff
__ Scientist/Researcher
__ Graphic/Fine Artist
__ Other_____
__ Manager
__ Consultant
__ Engineer
__ Mis Specialist
__ Educator

Your organization: (check only one)

__ International
__ Regional
__ National
__ Local

Your organizations employees, world-wide: (check only one)

__ 1 - 100
__ 101 - 200
__ 201 - 500
__ 501 - 1000
__ 1001 - 5000
__ 5000+

Products and services you currently use, recommend, specify or purchase annually:(check all that apply)

__ Animation
__ Broadcast Media
__ Business/PC Graphics
__ CAD/CAM/CAE/CIM/Robotics
__ Desktop/Other Publishing
__ Film/Video Recorders
__ Fine Arts
__ Graphic Design
__ Graphic Libraries & Software
__ Image Processing
__ Input Devices
__ Monitors & Displays
__ Other
__ Multimedia/Hypermedia
__ Paint Systems
__ PDAs/Pers. Communications
__ Printers and Plotters
__ Scan Converters
__ Scanners
__ Scintific Visualization
__ Special Graphic Processors
__ User Interface Software
__ Video
__ Virtual Reality/ Simulation
__ Workstations

Rate your buying influence:

__ Final Decision
__ Specify
__ Recommend
__ No Rate

Your organization´s annual purchasing budget:

__ $0 - $100,000
__ $100,001 - $500,000
__ $500,001 - $1,000,000
__ $1,000,001 - $5,000,000
__ More than $5,000,000

Publications you read regularly: (check all that apply)

__ IEEE Multimedia
__ ACM Multimedia Systems Journal
__ IEEE Communications Society Journal
__ Communications of the ACM
__ Other_____
__ IEEE Computer
__ Interaction
__ Wired
__ New Media
__ Morph´s Outpost

Are you primarily interested in:

__ Content Creation
__ Both
__ Technical Aspects of Multimedia
__ Neither

Mailing List: (The conference attendee list may be once available to outside organizations. Check the following if you wish to restrict the use of your name for computer-related mailings.)

__ Any Mailing List (default)
__ ACM announcements only (including all SIGS)
__ No Mailing List

Hotels

The following hotels have been proposed by SPIE. Use the form to make your reservation.

- 1. Sheraton Boston Hotel & Towers
  39 Dalton Street
  Boston, MA 02199
  Rates at this hotel are $145 for a single and $160 for a double room (plus tax).
  [The Sheraton is the SPIE headquarters hotel. All reservations must be made through the Housing Bureau. Due to the popularity of the headquarters hotel, you must make reservations early.]
- 2. Boston Back Bay Hilton
  40 Dalton Street
  Boston, MA 02115
  Rates: $139 single or double room (plus tax)
- 3. Boston Marriot Hotel - Copley Place
  110 Huntington Avenue
  Boston, MA 02116
  Rates: $175 single or double room (plus tax)
- 4. Swissotel Boston
  1 Avenue de Lafayette
  Boston, MA 02111
  Rates: $129 single or double room for superior accommodations
  $169 single or double room for butler executive level accommodations.
- 5. Copley Square Hotel
  47 Huntington Avenue
  Boston, MA 02116
  Rates: $119 single room, $129 double room (plus tax)
- 6. The Tremont House Hotel
  275 Tremont Street
  Boston, MA 02116
  Rates: $119 single or double room (plus tax)
- 7. The Colonnade Hotel
  120 Huntington Avenue
  Boston, MA 02116
  Rates: $118 single or double room (plus tax)
- 8. The 57 Park Plaza Hotel (a Howard Johnson Hotel)
  200 Stuart Street
  Boston, MA 02116
  Rates: $110 single room, $120 double

(plus tax)

SPIE´S PHOTONICS EAST & ACM MULTIMEDIA ´96 HOTEL RESERVATION FORM

Please submit one room request per form, forms may be photocopied. SPIE´s Photonics East ´96 ACM Multimedia ´96 Boston, Massachusetts 17-22 November 1996

Mail Housing form to (use one option form only): SPIE/ACM Multimedia Housing Bureau, 313 Washington St., 51? 300 Newton Corner,MA 02158 Or Fax to 617/965-2729 Or Call 1-888-399-2282 (International Attendees, call 617/928-0400) Reservations must be received by the SPIE/ACM Housing bureau by Friday 25 October, 1996.

Arrival Date:_____ Departure Date:_____
Last Name:_____ First Name:_____ Middle Name:_____
Company:_____
Street Address:_____
City: _____ State/Country: _____Zip Code: _____
Phone (country code): _____(city or area code):_____/_____
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__ Non smoking Room Requested

Indicate 1st, 2nd, and 3rd hotel choice and type of accommodations.
(See hotel and rate information and maps on next page).

Hotel Choices
Type of Accommodations:
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3. _____

___ single: 1 person/1 bed
___ double: 2 people/1 bed
___ double/double: 2 people/2 beds
___ triple: 3 people/2 beds
___ quadruple: 4 people/2 beds
___ Other: _____
(such as 1 or 2 bedroom suites)

If all three requested hotels are unavailable,
please process this reservation according to:

__ comparable room rate
__ proximity to Hynes Convention Center
__ Need special accommodations (such as mobility impaired)
State nature of requirement:_____

Name of all room occupants (In addition to self)

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3. _____ 4. _____

ROOM GUARANTEE INFORMATION
All hotels require rooms in be guaranteed at seast 14 days prior to the arrival date. Hotels reserve the right to cancel nonguaranteed reservations. Any cancellation without penalties must tbe made at least 48 hours prior to arrival date.
Rates are room per night and subject to a 9.7% tax. Please complete credit card information requested below, or send a check directly to the hotel after receiving your official housing bureau confirmation.
Do not send check to the housing bureau; if received they will be returned.

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Name on card: _____Signature: _____

Conference Organization

Multimedia'96
The Fourth ACM International Multimedia Conference and Exhibition

18-22 November 1996
1515 Broadway, New York, NY 10036-5701

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ACM MULTIMEDIA 96

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- Jay Strosnider, Carnegie Mellon University
- Kazuo Sugihara, University of Hawaii at Manoa
- Maria Theodoridou, CWI and FORTH
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- Sylvia Wilbur, Queen Mary & Westfield College
- Michael Wilson, Rutherford Appleton Laboratory
- Michael Wynblatt, Siemens Corporate Research
- Raj Yavatkar, Intel
- James C. Yee, Philips Research Palo Alto
- Polle Zellweger, Xerox PARC
- Lixia Zhang, Xerox PARC

- Wei Zhao, Texas A&M University
- Taieb Znati, University of Pittsburgh
- Michael J. Zyda, Naval Postgraduate School

1A
Wednesday, November 20
11:00am-12:30pm
Multimedia Analysis
Session Chair: Brian Smith, Cornell University

A Shot Classification Method to Select Effective Key-Frames for Video Browsing
Hisashi Aoki, Shigeyoshi Shimotsuji and Osamu Hori
Research and Development Center, Toshiba Corporation

Indexing and Retrieval of Digital Video Sequences Based on Automatic Text Recognition
Rainer Lienhart
University of Mannheim

Automatic Audio Content Analysis
Silvia Pfeiffer, Stephan Fischer and Wolfgang Effelsberg
University of Mannheim

1B
Wednesday, November 20
11:00am-12:30pm
Authoring I
Session Chair: John Buford, University of Massachussets, Lowell

A Multimedia System for Authoring Motion Pictures
Ronald Baecker, Alan J. Rosenthal, Naomi Friedlander, Eric Smith and Andrew Cohen
University of Toronto

CVEPS-A Compressed Video Editing and Parsing System
Jianhao Meng and Shih-Fu Chang
Columbia University

Negotiation for Automated Generation of Temporal Multimedia Presentations
Dalal,M. and Feiner, S. and McKeown, K. and Pan, S. and Zhou, M. and Hollerer, T. and Shaw, J. and Feng, Y. and Fromer, J.
Columbia University

2A
Wednesday, November 20
2:00-3:30pm
Image Parsing
Session Chair: Wolfgang Effelsberg, University of Mannheim, Germany

Comparing Images Using Color Coherence Vectors
Greg Pass, Ramin Zabih and Justin Miller
Cornell University

MMVIS: Design and Implementation of a Multimedia Visual Information Seeking Environment
Stacie Hibino and Elke A. Rundensteiner
University of Michigan

VisualSEEk: A Fully Automated Content-Based Image Query System
John R Smith and Shih-Fu Chang
Columbia University

2B
Wednesday, November 20
2:00-3:30pm
System Building
Session Chair: Dan Swinehart, Xerox Palo Alto Research Center

On-Demand Regional Television over the Internet
Haakon Bryhni, Hilde Lovett, Erling Maartmann-Moe, Dag Solvoll and Tryggve Sorenson
Norwegian Computing Centre

A Centralized Audio Presentation System
Albert L. Papp III and Meera M. Blattner
University of California, Davis, and Lawrence Livermore National Laboratory

Transport QoS Programmability
Andrew Campbell and Geoff Coulson
Columbia University and Lancaster University

3A
Wednesday, November 20
4:00-5:00pm
Scheduling and Synchronization
Session Chair: Hui Zhang, Carnegie Mellon University

Adaptive Rate-Controlled Scheduling for Multimedia Applications
David K.Y. Yau and Simon S. Lam
University of Texas at Austin

Proving Temporal Consistency in a New Multimedia Synchronization Model
J.P. Courtiat and R.C. De Oliveira
LAAS/CNRS

3B
Wednesday, November 20
4:00-5:00pm

Applications
Session Chair: Hirotada Ueda, Hitachi Denshi, Ltd.

Image Compositing System Capable of Long-Range Camera Movement
Masaki Hayashi, Kazuo Fukui and Yasumasa Ito
NHK Science and Technical Research Labs

'Smart Clothing': Turning the Tables (Privacy and Personal Empowerment through wearable Multimedia and Wireless Communications)
Steve Mann
MIT Media Lab

4A
Thursday, November 21
9:00-10:30am
Groupware

Session Chair: Jorge Haake, GMD-IPSI

Meme Media and a World-Wide Meme Pool
Yuzuru Tanaka
Hokkaido University

Teaching and Learning as Multimedia Authoring
Gregory D. Abowd, Chris Atkenson, Amy Feinstein, Rob Kooper, Sue Long, Scott Register, Nitin "Nick" Sawhney and Mikiya Tani
Georgia Institute of Technology

CU-SeeMe VR Immersive Desktop Teleconferencing
Jefferson Han and Brian Smith
Cornell University

4B
Thursday, November 21
9:00-10:30am
Coding
Session Chair: Shih-Fu Chang, Columbia University

A JPEG Codec Adaptive to Region Importance
Jiying Zhao, Yoshihisa Shimazu, Koji Ohta, Rina Hayasaka and Yutaka Matsushita
Keio University

Methods for Encrypting and Decrypting MPEG Video Data Efficiently
Lei Tang
GSIA, Carnegie Mellon University/ Oracle Co

Adaptive Foveation of MPEG Video
T.H. Reeves and J.A. Robinson
University of Waterloo and University of Newfoundland

5A
Thursday, November 21
2:00-3:30pm
User Interfaces
Session Chair: Yuzuru Tanaka, Hokkaido University

Vibrotactile Feedback in Delicate Virtual Reality Operations
Li-Te Cheng, Rick Kazman and John Robinson
University of Waterloo and University of Newfoundland

A Quality Planning Model for Distributed Multimedia in the Virtual Cockpit
Mark Claypool and John Riedl
University of Minnesota

An Empirical Study of Attending and Comprehending Multimedia Presentations
Peter Faraday and Alistair Sutcliffe
City University, London

5B
Thursday, November 21
2:00-3:30pm
Servers

Session Chair: William Tetzlaff, IBM Thomas J. Watson Research Center

Segmented Information Dispersal (SID) for Efficient Reconstruction in Fault-Tolerant Video Servers
Ariel Cohen and Walter Burkhard
University of California

Adventures in Building the Stony Brook Video Server
Michael Vernick, Chitra Venkatramini and Tzi-cker Chiueh
State University of New York at Stony Brook

Disk Striping Strategies for Large Video-on-Demand Servers
Tat-Seng Chua, Jiandong Li, Beng-Chin Ooi, Kain-Lee Tan
National University of Singapore

Thursday, November 21
4:00-5:00pm
Award Papers

Session Chair: T.D.C. Little, Boston University and Wendy Hall, University of Southampton

Best Paper

Open-Vocabulary Speech Indexing for Voice and Video Mail Retrieval
M.G.Brown, J.T.Foote, GJF Jones, K.Sparck Jones and S.J.Young
Olivetti Research Ltd and Cambridge University

Best Student Paper

Do Story Agents Use Rocking Chairs? The Theory and Implementation of One Model for Computational Narrative
Kevin Brooks
MIT Media Lab

6A
Friday, November 22
9:00-10:30am
Authoring II
Session Chair: Roy Rada, University of Liverpool

A Framework for Supporting Multimedia Document Authoring and Presentation
K. Selcuk Candan, B. Prabhakran and V.S. Subrahmanian
University of Maryland

Anecdote: A Multimedia Storyboarding System with Seamless Authoring Support
Komei Harada, Eiichiro Tanaka, Ryuichi Ogawa and Yoshinori Hara
NEC Corporation

Sketching Multimedia Templates for Generating Hypermedia from Specifications
S. Fraisse, J. Nanard and M. Nanard
LIRMM, Montpellier France

6B
Friday, November 22
9:00-10:30am

Networks

Session Chair: Klara Nahrstedt, University of Illinois at Urbana-Champaign

The Case for Concurrent Reliable Multicasting Using Shared Ack Trees
Brian Neil Levine, David B. Lavo and J.J. Garcia-Luna-Aceves
University of California, Santa Cruz

Enhancing Network Services through Multimedia Data Analysers
Ferdinando Samaria, Harold Syfrig, Alan Jones and Andy Hopper
Olivetti Research Ltd

Rate Shaping by Block Dropping for Transmission of MPEG-Precoded Video over Channels of Dynamic Bandwidth
Wenjin Zeng and Bede Liu
Princeton University

Stephan Fischer
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ACM MULTIMEDIA 96

Demonstrations

Arding Hsu
Siemens Corporate Research
Princeton, NJ, USA
Demonstrations Chair

The demonstrations which will be running Wednesday, 5:00- 6:30pm and Thursday 11:00am-12:30pm; We will be offering demonstrations representative of new technologies, unique applications, and interesting media content in the areas outlined below:

- Indexing and Retrieval of Digital Video
- Multimedia Authoring and Development environments
- Internet Multimedia
- Interactive Courseware and Systems
- Media Sharing and Distribution
- Content-based Image Access
- Media Presentation in Different Application Domains

Wednesday, November 20
5:00-6:30pm

Thursday, November 21
11:00am-12:30pm

Stephan Fischer
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ACM MULTIMEDIA 96

Art Program

"STORYTELLING AFTER CINEMA"

Art & Multimedia Session

ACM MULTIMEDIA'96
November 18 - 22, 1996
Hynes Convention Center
Boston, MA, USA

The complexities of organizing a forum/workshop (not an exhibition) on the issues of story-telling and interactive narratives obviously implicates projects from all areas of electronic media. Though we are certainly aware of a number of important installation, performance, and immersive works, we are restricted by the requirements of space and time, a support structure (particularly equipment and staff), and the kind of budget necessary to bring large scale works to the forum for such a short period and a limited audience.

For these reasons, we have chosen to limit the works selected to CD-ROM and WWW sites. This does not preclude the inclusion of larger scale works in the discussions utilizing documentary materials (slides, tapes, or sound).

Art Program Committee: Monika Fleischmann, Timothy Druckrey, Wolfgang Strauss, Timothy Garrand, Regina Cornwell, Dieta Sixt, Wayne Wolf, Arding Hsu, Bob Allan, Michael Bove, Philippe Aigrain, Allan Kuchinsky

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GMD - German National Research Center for Information Technology
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fleischmann@gmd.de

Program

The Art and Multimedia Showroom operates Wed. to Thursday 9:00-5:30 and Friday 9:00-1:30

Wednesday 20/11/96

9:00-10:30: Opening session with keynote speaker Glen Hall from Aardman Animations

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Thursday 21/11/96

9:00-10:30: Panel 4

Storytelling after Cinema I

Pioneering filmmaker Georges Melies presaged the anti-narrative tradition which has been such a dominant theme in the work of artists throughout this century. Experimental film and Expanded Cinema asked the same questions in the sixties as media art does today: How can we bring cinema out of the cinema? How is it possible to initiate a new school of seeing? How can the viewer's perception adapt? How can the viewer's eye be controlled?
Will there be a cinema after the cinema with the help of technology? Do new film structures help to develop a new perception of time and space? Will the seduction of the senses lead the senses to its essentials? Is the boundary between the sensorium and its represen- tations collapsing through feedback systems, interface design, human and machine memory, dynamic time and space structures? Is the responsibility of the author shifting?

Panelists: Peter Callas, Walter Siegfried, Joachim Sauter, Derrick DeKerkhove, Monika Fleischmann

10-30-11:00: Coffee break

Thursday 21/11/96

11:00-12:30: Panel 5
New art venues

Is the gallery venue over? Telematic arts such as teleconferencing & internet define new art venues in themselves. The digital communica- tions network is where art exists today. Cyber-/Space is not the final frontier, it's in your imagination.

This panel will discuss alternative concepts to the traditional museums. Is the "Museum of the Future" a telephone based installation? Is it in the net or is it just an 'intelligent' building to the traditional museum? The Ars Electronica Center in Linz or The Media Museum of The Center for Art and Technology in Karlsruhe will be discussed alongside network symposiums not simply to try out novel formats for an event, but to erect a permanent platform from which the debate/exhibition will constantly reach out to engage specific segments of the techno-cultural revolution. Does a cultural world-wide organization such as the Goethe Institute give a global platform for new networks?

Panelists: Paul Sermon, Hans-Peter Schwarz, Gerfried Stocker, Lisa Corrin, Regina Wyrwoll

Thursday 21/11/96

9:00-4:00 pm Workshop 3
Interactive Narrative

An interactive narrative uses many techniques and possibilities to allow each user of the multimedia program to discover or co-author a story in a unique way. The panelists in this workshop will examine interactive narrative from a variety of perspectives including the following:
Descriptions of the techniques and structures being used by successful, commercial writers and designers of interactive narrative. An analysis of how historical and psychoanalytical theories of narrative can provide a useful theoretical "toolbox" for thinking about the parameters and ramifications of often radical narrative form in cyberspace.
A comparison of the 'classical' cinematic paradigms of narration with the new subcategories and changes in narrative concepts through interactivity.
A presentation of the design issues involved in creating non-linear interactive narratives for computer based storytelling systems. A proposition that the presentation of the information in an interactive 3D space has the potential to maintain the coherence of historical narrative while maximizing individual reader agency and exploration.
A demonstration that the extension of narrative through interactivity is less a disruption of tradition and more an incitement to reflect on the conditions of contemporary experience.

Ample time for discussion will be available after each presenter and at the end of the panel.

Contact: Tim Garrand,tpg@interwrit.mv.com,
Panelists: Jerry Aline Flieger, Timothy Druckrey, Kevin Brooks, Lira Nikolovska & John Biln, Andrea Zapp, Timothy Garrand

4:00-5:00: Award papers

6:00 on: Reception

Friday 22/11/96

9:00-10-30: Panel 7
Storytelling After Cinema II

Cinema is not only story telling writing, acting, composing, scoring, choreographing, or dramatizing. Rather, it is all of these. Is storytelling after cinema creating experiential playgrounds for participants? Are we moving from mass media to communicative media? Will new storytelling emerge like the Japanese Renga or will American structures again overwhelm other cultures?

Panelists: Graham Weinbren, Perry Hoberman, KP Ludwig John, Annika Blunck & Stephan Porombka

Friday 22/11/96

9:00-10:30: Panel 8
Architecture, Time and Fragmentation

This panel focuses on new notions of space as they emerge from the use of information and communication technologies. As new forms of perception and experience of time and space emerge, new fields of architecture appear. The topics addressed in the panel include, but are not be limited to:

- cyber-architecture and architecture of time/space structures
- hypertextual concepts for 3D information space
- spatial navigation as metaphor for the exploration of music
- algorithmically generated multi-media space-scapes
- literary, historic, symbolic, dynamic, and cinematic spatial devices

The implications of the technologically mediated changes in our conception and perception of time/space will be investigated by the panelists from various perspectives. The aim of the panel is to display the diversity of current trends to blend visual communication and architectural design resulting in new kinds of fragmented time/space-scapes.

Contact: Wolfgang Strauss, strauss@gmd.de
Panelists: Gerhard Schmitt, Peter Anders, Gerhard Eckel,
Beat Funk, Wolfgang Strauss

10:30-11:00: Coffee break

11:00-12:30: Closing session with keynote speaker Bill Buxton from University of Toronto and Alias / Wavefront

12:30-1:30: Lunch break

Friday 22/11/96

1:30-3:30: Art and Multimedia Showroom
Closing ART session with Timothy Druckrey & Monika Fleischmann

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THE ART AND MULTIMEDIA SHOWROOM OPERATES WEDNESDAY TO THURSDAY 9:00-5:30 AND FRIDAY 9:00-4:30

"Click-Art" and "WebArt - ArtWeb" present works of artists like William Forsythe, Jim Gasparini & Tennessee Dixon, Ken Feingold, Lewis Baltz, Tony Ousler & Constance DeJong, George Legrady, David Blair, Brad Miller, KP Ludwig John & Die Veteranen, Eric Lanz, Jean-Louis Boissier, Luc Courchesne, George Legrady, Bill Seaman, Miroslav Rogala, Tamas Waliczky, Perry Hoberman, Jeffrey Shaw, a.o.

Art Showroom Committee:
Timothy Druckrey, Monika Fleischmann, Wolfgang Strauss, Gerhard Eckel, Petra Unnuetzer Contact:
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ACM Multimedia '96 Workshops

Welcome!

ACM MultiMedia '96 is proud to host five full-day, in-depth workshops on topics of interest to the multimedia research community. This site contains up-to-date information on all the conference workshops. Although workshop participation is by invitation, most still have slots available. So if you see a workshop in which you would like to participate, please contact the workshop organizers directly for details. Please note that all workshop attendees are expected to register for the conference and must in addition pay a workshop fee of $50 on the day of the workshop. Take advantage of this unique opportunity to get the most out of ACM MultiMedia '96!

Wayne Wolf, Workshops Chair (wolf@princeton.edu)

Workshop Schedule

Tuesday, November 19:

- WP1: Courseware, Training, and Curriculum in Multimedia
- WP2: (Multi)Media Processors and Embedded Systems

Thursday, November 21:

- WP3: Interactive Narrative

Friday, November 22:

- WP4: Digital Video Libraries and Interoperability
- WP5: Using Multimedia Assessment Tools

ACM MULTIMEDIA 96

Courses

ACM Multimedia'96 is proud to offer an exciting selection of courses by a team of international experts. Learn the current state of the art and future trends in multimedia communication and networking, design of multimedia applications, digital library, multimedia information management, and more.

The course schedule is designed to allow attendees to learn various aspects of of a topic at introductory, as well as advanced level. Take advantage of this unique opportunity to get the most out of ACM Multimedia'96 by attending at least one course.

Rajiv Mehrotra
Kodak Imaging Research & Advanced Development
Courses Chair

MAP1

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Monday, November 18
9:00am-5:30pm
Multimedia Enabling Technologies and Applications
Course Level: Basic

This course is for beginners in multimedia and its objective is to teach the fundamentals of multimedia enabling technologies and demonstrate some applications. It will cover the following topics, with computer animations and video clips of international developments:

- Brief introduction and history of multimedia
- Multimedia networking technologies (Legacy LANs, isoEthernet, SMDS, ADSL, ATM)
- Image, video and audio compression standards (JPEG, MPEG-1, MPEG-2, H.261/263)
- Communications protocols for multimedia (TCP/IP, ST-II, RSVP, XTP) .
- Multimedia synchronization and application examples
- Multimedia conferencing and collaboration tools
- Multimedia and the Internet
- Multimedia to the home

Organizer and Lecturer:

Dr Nicolas D. Georganas, Fellow IEEE, is Professor of Electrical and Computer Engineering and Director of the Multimedia Communications Research Laboratory (MCRLab), University of Ottawa, Canada. He has led several multimedia application development projects , since 1984. He is a member of the Executive of the IEEE CS Technical Committee on Multimedia and Chair of its Enabling Technologies sub-committee. He is the General Chair of the IEEE Multimedia Systems'97 Conference in Ottawa. He has served as Guest Editor of the IEEE Journal on Selected Areas in Communications, issues on "Multimedia Communications" (April 1990) and on "Synchronization Issues in Multimedia Communications" (1996) and as Technical Program Chair of IEEE MULTIMEDIA'89 (Montebello, Canada, April 1989) and of the ICCC Multimedia Communications'93 Conference in Banff, Alberta, Canada. He is in the Editorial

Boards of the Journals Performance Evaluation, Computer Networks and ISDN Systems, Computer Communications and Multimedia Tools and Applications, and was an editor of the IEEE Multimedia Magazine. He was elected Fellow of IEEE for "leadership in university-industry research in, and performance evaluation of, multimedia communication networks and systems".

MAP2

Monday, November 18
9:00am-5:30pm
Systematic Design of Hypermedia Applications
Course Level: Intermediate

The objective of the course is to improve the ability of expressing the requirements and designing Hypermedia applications, disregarding the delivery medium (CD-ROM or WWW), the development environment and the development tools. Intended audience of this course are publishers, users, multimedia designers and developers, project managers and researchers. The participants will learn a set of conceptual primitives that can be used to describe and to design hypermedia applications in a precise and systematic way, covering structural, dynamic and presentation aspects. In addition the course will address some crucial issues concerning multimedia application development: the need of modularization, the relevance of the notion of reuse (i.e., of using multimedia contents, objects and operations in different contexts and for different purposes), the appropriate way of using development tools and environments. A final subject will be how the evaluate the quality and usability of hypermedia applications.

More specifically, the course covers the following topics: conceptual primitives for hypermedia design, modularization, reuse of hypermedia objects, specific problems for WWW applications, design phases, life-cycle of hypermedia development, evaluation and usability test of hypermedia applications.

Limited exposure of the participants to modern hypermedia applications (CD-ROM's or WWW) is useful, but not required. A larger number of demonstrations (around 10) will be used in order to exemplify the conceptual aspects of the presentation.

Organizers and Lecturers:

Franca Garzotto is Research Associate at the Department of Electronics and Information, Politecnico di Milano. She has aDegree in Mathematics from the University of Padova (Italy) and a Ph.D. in Computer Science from Politecnico di Milano. She has been active in the following research fields: data base systems, conceptual modelling of documents, hypertext and hypermedia modelling, hypermedia authoring systems, multimedia development tools, multimedia evaluation. She served as Program Chair of the International Workshop on "Hypermedia Design", held in Montpellier - France in June 1995). She served as Co-Chair of the International Workshop on "Evaluation and Quality Criteria for Multimedia Applications", held at MM'95. She has published several papers on the subject of hypermedia design and has cooperated in the development of advanced models (HDM) for the design and implementation of Hypermedia applications.

Paolo Paolini has received a degree in Physics from the University of Milan, master and Ph.D. in Computer Science from UCLA. He has been active researcher in the areas of Data Base (design and modelling), Office Automation, Hypermedia Design and Modelling, Hypermedia tools and implementation. He has conducted several research projects in the area of hypermedia, and also coordinated the implementation of several hypermedia applications, in the area of corporate training, education, cultural information points, tourism. He has cooperated in the development of advanced models (HDM) for the design and implementation of Hypermedia applications, and published a large number of papers on Hypermedia design. He has been general chairman of the ACM hypertext conference held in Milan (ECHT'92) and he is currently Associate Editor of the ACM journal Transactions on Information Systems (TOIS).

MA1

Monday, November 18
9:00am-12:30pm
Design Principles for Multimedia File Systems
Course Level: Intermediate

Since images, audio, and video differ significantly from textual and numeric data (with respect to their real-time characteristics, data rate, etc), conventional file systems are proving to be inadequate for supporting multimedia applications. On the other hand, video-on-demand servers, which are optimized for storing audio and video data, do not support textual and numeric data, and hence, cannot be used in general purpose computing environments. These shortcomings have spurred research efforts in designing and implementing integrated multimedia file systems that provide storage, retrieval, and editing facilities for various data types.

This course will provide a comprehensive overview of various issues involved in the design of such multimedia file systems. Specifically, we will examine placement and retrieval techniques for multimedia data over disk-arrays, buffer management policies, and design techniques for fault-tolerant and scalable multimedia file servers. We will discuss the insights gained from our implementation of a prototype multimedia file system. Since we will present both fundamental design principles as well as a detailed case study, the course will be of interest to casual participants as well as experienced practitioners. A copy of the slides, a collection of papers in the area as well as an extensive bibliography on these topics will be distributed to each participant.

Organizer:

Harrick M. Vin is currently an Assistant Professor of Computer Sciences, and the Director of the Distributed Multimedia Computing Laboratory at the University of Texas at Austin. His research interests are in the areas of multimedia systems, high-speed networking, mobile computing, and large-scale distributed systems. Over the past 5 years, he has co-authored more than 55 papers in leading journals and conferences in the area of multimedia systems.

Lecturers:

Pawan Goyal and Prashant J. Shenoy
Department of Computer Sciences
Univ. of Texas at Austin, Austin, TX

MA2

Monday, November 18
9:00am-12:30pm
Building and Applying Digital Libraries I: Introduction
Course Level: Basic

This is part of a full-day course on digital libraries, at the end of which attendees should become able to participate in design, development, evaluation, and standardization efforts related to the global movement toward digital libraries. This session, Part I, will focus on concepts and technology from the multimedia, information retrieval, hypertext, and electronic publishing fields that relate to digital libraries (DLs) - using real case studies and examples to provide a suitable context. Projects included relate to CS (ACM literature, technical reports, courseware), material science (TULIP), and graduate education (electronic theses and dissertations), as well as the NSF/ARPA/NASA Digital Library Initiative.

Our "perspective" approach will deal with DLs regarding: user and social needs; interfaces and user interaction; architectures, components, protocols; content, publishing, and capture; and systems, engines, and operations. Issues of scalability and sustainability will be explored.

This course also can serve as a stand alone course on the underlying technology for digital libraries, especially information retrieval, hypertext and electronic publishing.

Organizer:

Dr. Edward A. Fox holds a Ph.D. and M.S. in Computer Science from Cornell University, and a B.S. from M.I.T. Since 1983 he has been at Virginia Tech (VPI&SU), where he serves as Associate Director for Research at the Computing Center, and Professor of Computer Science. Current research projects include "Interactive Learning with a Digital Library in Computer Science" as well as several building a digital library of theses and dissertations. Formerly editor-in-chief of ACM Press Database Products, chair of ACM SIGIR, and Program Chair for ACM Digital Libraries'96, he edited the "Sourcebook on Digital Libraries" in 1993, three special issues of CACM, and has written widely in the information retrieval, electronic publishing, multimedia, and digital library fields. He has given 27 courses or short courses since 1988.

Lecturer:

Robert M. Akscyn
President Knowledge Systems
Export, PA

MP1

Monday, November 18
2:00-5:30pm
The DAVIC Model for Interactive Television Systems
Course Level: Intermediate

DAVIC (Digital Audio Visual Council) is an international consortium formed by more than 200 companies for the purpose of developing interoperability specifications for digital audio-visual services such as interactive television. This course reviews the end-to-end DAVIC architecture, and provides a discussion of MHEG-5 and MPEG DSM-CC which are being adopted as part of the DAVIC 1.0 specification.

The DAVIC 1.0 specification consists of twelve parts, including an end-to-end reference model, service provider reference model, and delivery system reference model. Important components of the DAVIC architecture are MHEG-5 content model and MPEG-2 DSM-CC client-server protocol for session management and service access. The course will provide an overview of DAVIC, and will highlight MHEG-5 and DSM-CC. It will also compare these technologies with Internet and Web activities.

Organizer and Lecturer:

Dr. John F. Buford is Associate Professor of Computer Science and Director of the Distributed Multimedia Systems Lab at the University of Massachusetts Lowell. He has more than thirty-five publications including the book Multimedia Systems (ACM Press & Addison-Wesley, 1994). Dr. Buford has been active in international standards committees since 1991. He has presented courses on multimedia computing and systems to audiences in the US, Europe, Japan, and Australia.

MP2

Monday, November 18
2:00-5:30pm
Building and Applying Digital Libraries II: Research
Course Level: Intermediate

This is part of a full-day course on digital libraries, at the end of which attendees should become able to participate in design, development, evaluation, and standardization efforts related to the global movement toward digital libraries. This session, Part II, will focus on research and development, including principles and guidelines for design of scalable, sustainable DLs.

Our "source" approach will review collections of information about DLs (e.g., publications, workshops, D-Lib Magazine, other WWW sites), and survey important DL projects, worldwide, so attendees become able to gauge such efforts in terms of capabilities for: publishing, capturing, naming, describing metadata, indexing, cataloging, archiving, authenticating, managing intellectual property rights, searching, browsing, retrieving, converting, (re-)using, linking, and organizing.

The final hour will engage attendees in group efforts (with instructor supervision) for specifying requirements and developing alternative designs for: a networked digital library of theses and dissertations (that will include text, multimedia and hypertext structures) or other student-chosen applications. Extensive online WWW pages will provide reference material during and after the courses.

Organizer:

Dr. Edward A. Fox holds a Ph.D. and M.S. in Computer Science from Cornell University, and a B.S. from M.I.T. Since 1983 he has been at Virginia Tech (VPI&SU), where he serves as Associate Director for Research at the Computing Center, and Professor of Computer Science. Current research projects include "Interactive Learning with a Digital Library in Computer Science" as well as several building a digital library of theses and dissertations. Formerly editor-in-chief of ACM Press Database Products, chair of ACM SIGIR, and Program Chair for ACM Digital Libraries'96, he edited the "Sourcebook on Digital Libraries" in 1993, three special issues of CACM, and has written widely in the information retrieval, electronic publishing, multimedia, and digital library fields. He has given 27 courses or short courses since 1988.

Lecturer:

Robert M. Akscyn
President Knowledge Systems
Export, PA

TAP1

Tuesday, November 19
9:00am-5:30pm

Graphic Design for Multimedia User Interfaces
Course Level: Intermediate

This course will provide proven concepts and techniques for effective, information-oriented design of user interfaces. Many visual examples, including detailed case studies, will provide concrete examples and practical guidelines of use of color, symbolism, layout, organization of content, metaphorical references, navigational strategies, and information visualization. The following items will be addressed: What is a user interface? Metaphors, Mental model, Navigation, Appearance, Interaction, Data visualization. Designing for multiple cultures, ages, genders, nationalities, User interface design process. Issue will be discussed in terms of the following case studies: American Airlines SABRE Online Travel Information Network, American Airlines Wayfinder Training Game, Oracle Online Mentor: Designing Effective GUI Applications CBT, DTIC: Golden Gate Online Tutorial for Database Searching, Oracle Online Mentor: CBT GUI Design Standards, Prodigy Corporate GUI Design Standards, and Random House New Media CD-ROM Titles.

Organizer and Lecturer:

Aaron Marcus is a leading designer of user interfaces, multimedia, and online services. His career in computer graphics and graphic design spans 25 years, and his firm Aaron Marcus and Associates, Inc. (AM+A) in Emeryville, California, has helped design award-winning products for 13 years. Mr. Marcus has written or co-written four books, including Graphic Design for Electronic Documents and User Interfaces, and the Cross-GUI Handbook. He has presented courses around the world at major conferences and corporate sites since 1990.

TAP2

Tuesday, November 19
9:00am-5:30 pm
Multimedia Networking: Principles and Protocols
Course Level: Intermediate

In this short course we will study the current trends in high-speed multimedia networking technologies. First, we will examine how multimedia traffic can be supported over a local area network with a simple ring or bus topology. Then, we will examine the design challenges for supporting real-time traffic and bursty data traffic over global networks, such as, ATM and the Internet, with arbitrary topology. We will study various possible routing and traffic management techniques for integrating both types of traffic sources on such networks. In addition we will discuss higher layer protocols for real-time traffic in ATM and the Internet, such as, SRTS, NTP, RTP, RTCP and RSVP.

In particular, we will study traffic management methods for:

- Real-time sources:
  1. rate control at the network's boundaries (e.g., leaky bucket),
  2. scheduling and traffic shaping with local timing (e.g., deadline scheduling, priority queueing),
  3. pseudo-isochronous cell switching in ATM, and
  4. time-driven priority on the global Internet with GPS-based synchronization, and
- Bursty data sources:
  1. rate-based flow control in ATM for ABR traffic,
  2. credit-based flow control,
  3. "Hot potato" and deflection routing, and
  4. deflection with convergence routing.

Organizer and Lecturer:
Yoram Ofek received his B.Sc. degree in electrical engineering from the Technion-Israel Institute of Technology in 1979, and his M.Sc. and Ph.D. degrees in electrical engineering from the University of Illinois-Urbana in 1985 and 1987, respectively.

From 1979 to 1982 he was affiliated with RAFAEL, as a research engineer. During 1983-1984 he was at Fermi National Accelerator Laboratory, Batavia, Illinois, and from 1984 to 1986 he was with Gould Electronics, Urbana, Illinois. Since 1987 he has been a research staff member at the IBM T. J. Watson Research Center, Yorktown Heights, New York. His main research interests are routing and multicast, flow-control and fairness in local and wide area networks, optical networks, distributed algorithms and self-stabilization, parallel computer architectures and fault tolerance, real-time and clock synchronization.

Dr. Ofek was the program co-chairperson of the 6th and chair of the 7th IEEE Workshop on Local and Metropolitan Area Networks. In IBM Dr. Ofek has initiated and led the research activities on ring LANs with spatial bandwidth reuse, switch-based LANs, and the use of synchronization for ensuring quality of service (QoS) in global networks like ATM and the Internet.

TA1

Tuesday, November 19
9:00am-12:30pm
Image and Video Databases
Course Level: Intermediate

The power of multimedia systems originates in the fact that disparate information can be represented as a bit stream. This is a big advantage because every form of representation, from video to text, can be stored, processed, and communicated using the same device: a computer. Better tools to produce and manage data, combined with the natural human desire for information, has resulted in a tremendous data explosion. In most cases, including web-surfing, this has resulted in tremendous data overload. Keyword-based systems are very limited, particularly for images and videos. Keywords provide more information about the person who enters the keywords than about the image itself. Content-based access to data is becoming essential in many applications.

This course will address issues in image and video databases. We will discuss basic issues in designing multimedia information systems. Data models for representing multimedia information at several abstraction levels will be introduced. Nature of queries and interfaces will be explored and suitable architecture to acquire and process multimedia information will be discussed. We will discuss desirable features in multimedia information systems by considering concrete examples. We will briefly review the state of the art in this emerging field. We will present examples of a working system from Virage on a computer in the course. Using Virage's system different aspects of image and video databases will be explained in hands-on practical manner.

Organizer and Lecturer:

Ramesh Jain is currently a Professor of Electrical and Computer Engineering, and Computer Science and Engineering at University of California at San Diego. Before joining UCSD, he was a Professor of Electrical Engineering and Computer Science, and the founding Director of the Artificial Intelligence Laboratory at the University of Michigan, Ann Arbor, MI 48109. His current research interests are in multimedia information systems, image databases, machine vision, and intelligent systems. He was the founder and the Chairman of Imageware Inc., an Ann Arbor based company dedicated to revolutionize software interfaces for emerging sensor technologies. He is the founding chairman of Virage, a company developing systems for visual information retrieval.

Ramesh is a Fellow of IEEE, AAAI, and Society of Photo-Optical Instrumentation Engineers, and member of ACM, Pattern Recognition Society, Cognitive Science Society, Optical Society of America, and Society of Manufacturing Engineers. He has been involved in organization of several professional conferences and workshops, and served on editorial boards of many journals. Currently, he is the Editor-in-Chief of IEEE Multimedia, andis on the editorial boards of Machine Vision and Applications, Pattern Recognition, and Image and Vision Computing. He received his Ph.D. from IIT, Kharagpur in 1975 and his B.E. from Nagpur University in 1969.

TP1

Tuesday, November 19
2:00-5:30pm
Large Scale Hypermedia Information Management
Course Level: Intermediate

The aim of this course is to examine the problems associated with large scale multimedia information delivery and management using hypermedia systems.

Hypermedia technology has reached the stage of providing excellent access to distributed multimedia, in particular through the World Wide Web. However, application developers are still faced with many problems when dealing with large-scale systems, such as the authoring effort required to create all the appropriate links,

the maintenance of link integrity during the re-organization of large structures and hypermedia linking to and from third party data.

Link management is crucial to maintaining control of large scale hypermedia projects. The course will consider various methods, including use of structured documents and separate databases of links.

The course will consider the meaning of the term "open" as applied to hypermedia systems, and will examine currently available systems including The World Wide Web and Hyper-G as well as the Microcosm system which was developed by the Multimedia Group at the University of Southampton specifically for managing large scale hypermedia resources.

Case studies in historical archives, delivering educational material, engineering documentation and electronic publishing, will be used throughout to illustrate the principles covered by the course.

Organizer:

Hugh Davis BSc MSc PhD MBCS is a Lecturer in Computer Science at the University of Southampton and was a founder member of the Microcosm project. He has been project manager for the past four years and in this capacity has worked closely with a number of projects that are using Microcosm as a basis for multimedia information system development. His research interests include the design and application of open hypermedia systems.

Lecturer:

Wendy Hall, Department of Electronics and Computer Science, University of Southampton, UK

Wendy Hall is Professor of Computer Science at the University of Southampton, UK. She is Director of the Multimedia Research Group in the Department of Electronics and Computer Science at Southampton and also co-directs the University's Teaching and Learning Technology Project and the recently established Digital Libraries Research Centre. Her research interests include the development of multimedia information systems and their applications in education, industry and commerce, multimedia publishing and multimedia information retrieval. Her group developed the open hypermedia system, Microcosm, which is now being commercially exploited through Multicosm Ltd.

Stephan Fischer
Last modified: Mon Sep 9 08:53:33 MET DST 1996

ACM Multimedia'96 Hynes Convention Center

November 18 - 22, 1996 Boston, MA, USA

Closing Art & Multimedia Session

Friday, November 21, 1:30 - 3:30 am, Room 303

Moderators: Tim Druckrey, Monika Fleischmann

Participants: all panelists of the Art & Multimedia Session and:

#Steve Mann

STOLEN STORIES FROM THE SURVEILLANCE SUPERHIGHWAY:

Detournement of surveillance using `personal imaging' and the personal documentary as a form of cultural engineering.

Three documentaries, funded in part by the Council for the Arts at

MIT, are described. All three use `personal imaging' as a new

cinematographic technique --- ``personal documentary" addressing

video surveillance from the perspective of the surveilled.

(1) ``Shooting Back" [http://18.85.20.100/shootingback.html],

explores the situationist tradition by confronting members of

organizations who place us under surveillance. The resulting

documentary was exhibited on the World Wide Web while it was being

generated. `Wearable wireless webcam' challenges `editing' tradition.

(2) `My Manager', borrows from the Stellarc tradition, allowing

participants to remotely contribute (via the World Wide Web) to the

creation of the documentary. Just as representatives in an

organization absolve themselves of responsibility for their

surveillance systems by blaming surveillance on managers or others

higher up their official hierarchy, the artist absolves himself of

responsibity for taking pictures of these representatives without

their permission because it is the thousands of viewers on the World

Wide Web who are `managing' (controlling) the artist and

taking the pictures. The subjects of the pictures, for example,

department store managers, who had previosly stated that ``only criminals are afraid of video cameras", now implicate themselves of their own accusations by showing fear in the face of a camera. In response to their tremendous fear and paranoia, they are handed a form which they may use to have their pictures deleted from the artist's manager's (the Web audience's) database. The form asks them for name, social security number, and the reason for which they'd like to have their images deleted, and requests that they sign a section certifying that the reason is not one of concealing criminal activity, e.g. hiding the fact that their fire exits illegally chained shut.

Through `reflectionism' the department store floor manager sees in the ``mirror" the artist as a puppet on a (wireless) ``string". `My Manager' forces attendants/maintainers of the `Surveillance Superhighway' to snap out of being puppets for a brief instant, and confront the reality of what their blind obedience can lead to.

(3) `No Camera', explores the reaction of surveillance proponents to a wearable television screen showing their likeness (recorded previously or by transmission from another camera); any objection to the apparatus on the grounds that photography is prohibited is ill-founded because the artist's rig is merely a display --- there is No Camera.

CV

Steve Mann, inventor of wearable computer/personal imaging system, co-founded ``Wearable Computing" project at MIT Media Lab where he is currently a doctoral student completing PhD [graduation=Spring '97]: He explored means of characterizing response of objects to arbitrary lighting; created self-linearizing camera calibration procedure; formulated first true projective image mosaicing/compositing algorithm. also interested in visual arts; has exhibited his

pencigraphic `lightspace' images in numerous art galleries + attempted

to instill change in consciousness and reorder everyday life.

He currently holds degrees in physics + electrical engineering.

His previous degree is Master of Electrical Engineering. He published

numerous scholarly articles on wearable computing, image processing,

new image representations, and photometric image-based modeling.

email: steve@media.mit.edu

Media: Lightspace/Pencigraphy, Wearable Multimedia Computer with wireless communications and video processing hardware.

ACM Multimedia'96 Hynes Convention Center

November 18 - 22, 1996 Boston, MA, USA

Storytelling after Cinema I

Thursday, November 21, 9:00 - 10:00 am, Room 306, Panel 4,

Moderator: Cynthia Goodman

Panelists: Monika Fleischmann, Peter Callas, Walter Siegfried, Beat Funk

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#Cynthia Goodman

InfoART, an interactive CD-ROM art catalog, highlights the achievements

of sixteen of the leading artists in the world who are working in new media

including Nam June Paik, Christa Sommerer and Laurent Mignonneau, Scott

Fisher, Perry Hoberman, Paul Earls, Paul Garrin, Steina Vasulka, David

Rokeby, Tsai Wen-Ying, Peter d'Agostino, Edmond Couchot, Benjamin Britton, Grahame Weinbren, Luc Courchesne and Jean-Louis Boissier.

InfoART was edited and produced by digital art authority Cynthia

Goodman and published by Rutt Video and Interactive, New York. Many of the works included premiered in the InfoART Pavilion at the ,95 Kwangju Biennale organized jointly by Goodman and Paik. The interactive multimedia compositions on the CD utilize video, virtual reality, digital photography, synthesized music, three-dimensional laser imagery, digital life and the world wide web. The work of each artist is explained through interviews, video documentation, diagrammtic illustrations, biographical information and criticism.

CV

Dr. Cynthia Goodman was former Director of the IBM Gallery of Science and Art, New York, where she organized the landmark Computers and Art exhibition. The acompanying publication Digital Visions: Computers and Art serves as a textbook in the field. As Fellow at the Center for Advanced Visual Studies, MIT, she was director of Arttransition '90. Currently she is organizing a large travelling exhibition of interactive art for the Museum of Fine Arts, Houston, writing a book on interactivity and art as well as developing interactive art projects at Rutt Video and Interactive.

email: CGood5474@aol.com

Media: CD-ROM, Mac/PC

#Monika Fleischmann

Storytelling after cinema

Storytelling in virtual performance environments (internet, on-line tv, virtual theater) has to consider:

- the effect of a work on its audience but also the quality of the presence

- the structure of narrative itself

- the needs or desires of the performance maker

- the signification of gesture, body, mouvement, dialogues

- the interaction between actor and stage and props but also the audience

- the use of technical and creative support as such as sound and video

- the perception and acting concept but also the organisation and management of the performance-places.

Using virtual objects, spaces and bodies, ways are shown in which the influences of the technology / the media can be reflected at an aesthetic level, and in which several types of relationships of man and technology can be designed and tested. Traditional tools of illusion such as theatre stages or TV screens are basically defined by delimitation and therefore have to be separated from the viewers. The virtual media, however, provide access to spaces without frontiers. They deal the dissolution of space and time - and the telling of non-linear stories. The human body is the interface between the inside and the outside, between reality and virtual reality. Works discussed: Home of the Brain, Liquid Views, Rigid Waves, Virtual Performance.

CV

Monika Fleischmann is a media artist and head of computer art activities at GMD's Institute for Media Communication. In 1988 she was one of the founder members of ART+COM, Berlin, a research institute for computer assisted media research. Her multidiscipline background (fashion design, art and drama, computergraphics) made her an expert in the world of art, computer science and media technology. Her artistic works deals with identity and perception, the research projects are based on interface

design, and new forms of communication. Her main interest is to bring poetry and imagination into media artworks. Opposite to the theory of the disappearing body her position in media theory is to recover the senses of the body.

email: fleischmann@gmd.de, http://viswiz.gmd.de/fleischmann

Media: S-VHS-NTSC

#Luc Courchesne

Authoring a hypermedia play: Salon des ombres / Hall of Shadows

Interactive theatre for four virtual beings and a live audience using

five networked computers with touch pads, four laserdiscs players and

four video projectors. Produced in collaboration with the Musee d'art contemporain de Montreal, with support from the Canada Council, The Conseil des arts et des lettres du Quebec and the ZKM / Karlsruhe.

The idea for my new work Hall of Shadows, which I call an interactive

video theater, came when I imagined out of nowhere these four characters busily entertaining each other while tolerating my conspicuous presence. I felt that, if they didn't really want me to get involved in their

discussion, they would simply have to deal with it if I did. The set up

for writing an interactive "play" was in place. From my position Ñ eventually the visitor's Ñ I felt a delicate ballance had to be achieved between watching and getting involved. A finished "hyperplay" script could look like an extravagant music score, the problem being how to reference the context for each sceen to help the actors. In my case, the shooting involved 4 cameras simultaneously recording the four actors interacting. I played visitors on the set. The difficulty in editing, and programming the footage was in making the now virtual actors play together as tightly as possible. It was like directing them again. As in theater, the "play" has to be staged. The exercise includes camouflaging electronic equipment and cables. Getting the most important content features to impact on visitors and monitoring their actions as prescisely as possible.

After Portrait One (1990) which explored the potential of the

conversational interface and of the fictional approach to hypermedia

portraiture, and after Family Portrait (1993) which experimented with

networking, multi-user systems and also with the the documentary approach to hypermedia portraiture, The Hall of Shadows (1996) further develops the user interface by introducing, along with the imposed conversational framework which has become the trademark of the previous work, a form of visitor modelisation that will strenghten the impression of communication between visitors and virtual beings.

CV

Luc Courchesne was born in 1952 in St-Leonard d'Aston, Qubec. He studied

at the Nova Scotia College of Art and Design, Halifax (Bachelor of Design

in Communication, 1974), and at the Massachusetts Institute of

Technology, Cambridge (Master of Science in Visual Studies, 1984). He

began his explorations in interactive video in 1984 when he co-authored

Elastic Movies, one of the earliest experiement in the field with Ellen

Sebring, Benjamin Bergery, Bill Seaman and others. He has since produced

several installations including Encyclopedia Chiaroscuro (1987), Portrait

One (1990), Family Portrait (1993) and Hall of Shadows (1996). His work

has been shown extensively in galleries and museums worldwide. (Sydney's Art Gallery of New South Wales, New York's Museum of Modern Art, Montreal's Musee d'art contemporain, Ottawa's National Gallery of Canada, Los Angeles County Museum of Art). He is professor of information design at Universite de Montreal, and currently artist in residence at the Museum of New Zealand in Wellington.

email: courchel@ere.umontreal.ca

Media: Video, Slides

#Walter Siegfried

Sound-Tracks to Reality

I will present a type of work that I have developed over the last years - the composition of walks. These are

compositions that were developed for a certain area and are presented via a walkman to the audience during a temporal coordinated walk. So the "story" develops during the movement of the walk, the route becomes the main thread of the composition, which is formed out of noises, elements of conversations and musical fragments.

The decisive factor is that the storytelling doesn't lead to an internal imagination, but leads perception out to the things and happenings that surround us. "The film" is composed of an unchanging artificial-artistic sound and of an active reality which is continuously developing a new, and which establishes itself as the real imageworld under the sound.

Hence the programmatic title of the first work of this type is: "Sound-Tracks to Reality".I will try to convey the basic idea in a talk using slides and sound illustrations.

CV

Walter Siegfried was born 1949 near Lucern, Switzerland. Finished his studies of Anthropological Psychology, History of Art, and Philosophy in 1977 with a doctoral dissertation on dance. Various teaching activities in Art Academies and Universities in Germany, France and Switzerland. 1982-85 Research work at the Max-Planck-Institute (Ethology) in Seewiesen on the biological aspects of dancing - published in "Beauty and the Brain" (Boston, Basel 1988) as "Dance, the Fugitive Form of Art. Aesthetics as

Behavior". Since 1986 free artistic projects encompassing such fields as "Installation" (The Cable Core), "The Art of Walking" (The City Dancers / Compositions for Walks / A Schubert Walk) and Performance" (Kleine Implantologie / Echo-Tope).

email: 106415.1060@compuserve.com (Walter Siegfried)

Media: Slideprojector for Euro-Slides (50x50mm), Audio cassette recorder

(Stereo), Amplifier, Speakers

#Beat Funk

Cinematic Space

It is generally acknowledged that as a part of the cinematic experience, the border between inside and outside tends to dissolve, the barrier between what we call inner experience mental, emotional, psychological processes, and that which takes place outside ourselves, outside our bodies, out there in that thing which we have agreed to call reality. Given the notion of an autonomous subject, that border is something clearly defined, immovable. Inside is not outside, and vice versa. The way in which the cinematic experience is staged, even more than the movie itself, functions to diffuse that border. The darkened room and the upholstered seats function in this manner; they turn that room into a refuge for regression. The effect of the cinematographic apparatus dimmed room, illuminated screen, projector is to soften up that border, to stage a hypnotic session. Any stimulation from outside is as far as possible eliminated; seats are covered with soft upholstering so that pressures to the body are kept to a minimum, as they might irritate the spectator. Instead, the spectator's attention is focused ahead not on a pendulum, not on a rotating optical disk but on the screen. And on that screen, the cinematic space is enacted, which is filled in by the recipients. Every now and then, this will effect the strange experience of having one's perception of reality mixed up, of hallucinating in the middle of the cinematic experience. Seen in this way, the cinematic space is an anticipation of cyberspace in several aspects. There, we are seated in an upholstered chair, moving through cinematic space; here, we are seated in front of a "screen", too, moving within the world-wide network, and the only difference is that in the latter case, we interact with others. In both cases, the body remains unharmed. We sit where we sat before.

CV

Beat Funk, born 1957 in Aarau (CH), studied history, philosophy and science of film. He is a Filmcritic and Media

Expert in Zuerich.

email: bfunk@mail.access.ch

Media: S-VHS NTSC, QuickTime

ACM Multimedia'96 Hynes Convention Center

November 18 - 22, 1996 Boston, MA, USA

New Art Venues

Thursday, November 21, 11:00 - 12:30 pm, Room 306, Panel 5,

Moderator: Paul Sermon

Panelists: Hans-Peter Schwarz, Gerfried Stocker, Machiko Kusahara, Regina Wyrwoll

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#Paul Sermon

Telematic Dreaming

When I consider the title of NEW ART VENUES, I am immediately reminded of a relatively old work; HOLE-IN-SPACE, produced in 1980 by Kit Galloway and Sherry Rabanowitz. A piece which was basically a teleconferencing link between two shop windows, allowing the public walking in 5th Avenue, New York to communicate with the public on a street in down town Los Angeles. The venue of this unannounced public art event, which lasted four days, existed, not only, as a satellite up-link across the USA, but more importantly on the streets in the respective towns. Ultimately the public were their own artwork. Rabonawitz and Galloway created the venue and on the third day the television and press reported and announced it to a mass audience, causing an overwhelming public response.

Telematic arts such as internet and teleconferencing projects define new art venues in themselves. However, they invariably find there way back to the gallery context as internet-cafe attractions in media art exhibitions. Unfortunately financial support for the media arts is more often than not supplied directly to the gallery context. The recent Biennale in Lyon, featuring 64 artists, exhibiting more than a 200 individual media art works, accumulated more technology in one Gallery space than ever before, on one of the largest budgets for art exhibitions in French history. The chronological order of the exhibition was self defining the genre of media art, and by definition an end to it. In my opinion the gallery venue is over. The digital communications network is not altogether the new one, but it is certainly where art now exists, waiting to emerge and manifest itself in venues and ways that we least expect, such as a shop window on 5th Avenue.

CV

Paul Sermon. Born in Oxford, England, 1966. Studied BA Hon's. (Bachelor of Arts) Fine Art degree at Gwent College of Higher Education, Wales, Post-graduate MFA (Master of Fine Arts) degree at The University of Reading, England. Awarded the Prix Ars Electronica "Golden Nica", in the category of interactive art, for the hyper media installation "Think about the People now". Artist in Residence and produced the telematic video installation "Telematic Vision" at the Center for Arts and Mediatechnology (ZKM) in Karlsruhe, Germany. Received the "Sparkey" award from the Interactive Media Festival in Los Angeles, for the telematic video installation "Telematic Dreaming". Currently living in Berlin, working as professor for telematic media in the newly established media art department at the Academy of Graphic and Book Arts in Leipzig, Germany. Exhibited works in Great Britain, France, Austria, Belgium, Finland, Germany, Holland, Canada, USA and Japan.

email: sermon@rz.uni-leipzig.de

VHS (PAL) video player, video (PAL) monitor, over-head projector, slide projector

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#Hans-Peter Schwarz

New Art Venues - The final death of the Museum?

Immersive environments and all kinds of men-machine interactivities gave an revolutionary input on art and - on a lower level - even on technology in general. Great challenges for art and its institutions will be the consequence of this development: The museum has to change its policy and even its space, galleries have to develop new methods to contact their clients, idiosyncratic artists have to experience in team working and the public has to learn new ways of perception. The history of modernism ist the history of proclamations for the death of the Museum. But the Museum is still alive and is still necessary for the survival of the arts. To guarantee this survival a completely new net-work between artists - art institutions - art criticism and the public has to be created. The lecture will give some hints, based on the experience the author made recently in Karlsruhe, Germany during the conception and realisation of a supposed new kind of museum: The Media-Museum in the Center for Art and Mediatechnology.

CV

Hans-Peter Schwarz was born1945 in Bielefeld, Germany. He studied visual communication at the Fachhochule Bielefeld, History of Art, Literature and European Ethnology at the University of Marburg. 1982 Dr. phil, 1983 - 90 Curator at the German Museum of Architecture in Frankfurt, 1984 - 92 Lecturer at the Universities of Marburg, Trier und Frankfurt, 1990 - 91 Head of planing for a new Museum for History of the 'Moderne' in Frankfurt. Since1992 he is Director of the Media-Museum in the Center of Art and Media Technology in Karlsruhe, since 1994 Schwarz is Professor at the Hochschule für Gestaltung in Karlsruhe.

schwarz@guido.zkm.de

Media: Mac, Power Point, Projection

#Gerfried Stocker

Museum of the Future

The Ars Electronica Center - museum of the future is not simply a collection or a gallery, but sees itself as a partner, as infrastructure and initiator. The implementation of artistic ideas is nowadays frequently only possible with considerable technological resources, so that traditional venues of art can only seldom provide the right framework. The altered conditions demand for new concepts. An institution such as the Ars Electronica Center, by virtue of its specific infrastructure in terms of hardware and of personnal, of its twin function as a place of production and of presentation, and also by virtue of its positioning "between the fronts", assumes in this connection the nature and function of a model for its time.

CV

Gerfried Stocker, born 1964 in Graz, Austria is presently managing director of the ars electronica center and artistic director of ars electronica festival.

He studied communication technology and is a musician and media artist. 1991 he founded x-space, an interdisciplinary group of artists and technicians, 1992 he was head of the "Steirische Kulturinitiative" in Graz/Austria. His Projects where shown at EXPO Sevilla '92, Bienale Venedig '93, ISEA '93 - '95, SIGGRAPH '94/'95, steirischer Herbst '94, Ars Electronica '95. He is publisher and writer of various publications in art and telecommunication. His own artistic work is focused on interactive installations and radio-/ tv-/ network-projects.

email: gerfried@www.aec.at

email: gerfried@mail.aec.at

Media: Laptop with VGA output (640x480 or 800x600) connected to beamer

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#Machiko Kusahara

Can all artworks move on the network?

Certainly not. The network has brought new possibilities for artists not only as a virtual exhibition space but also as an interactive space that allows sponteneous communication between the artist and the visitors. As interactivity achieves more importance in art, the network has become animportant medium of art. Yet there are projects/works that can be accomplished or exhibited only on a real space - at a physical venue. The importance of such venue is ever increasing. There are certain types of artworks that require physical space by its nature. Artworks using virtual reality technology are typical of that kind. Without maintaining such venue for artists our culture will loose the balance between technology and sensitivity. It is important to maintain such space for artists, not only for engineers and researchers, to enrich what we will see on the network in future.

CV

Machiko Kusahara is an Associate Professor of Media Art at the Faculty of Arts, Tokyo Institute of Polytechnics. She has been in this field since 1984 with the background in mathematics, history of science, and art. Besides taking responsible roles in academic and industrial organizations, she is a co-founder and a Program Committee member of Digital Image, the largest group of digital artists and designers in Japan. Kusahara curated many exhibitions including those organized by NTT InterCommunication Center and has been an on-line/off-line jury member for competitions including Interactive Media Festival(95,96), MILIA(95,96), and The Portrait in Cyberscape(95). Her recent research has been centered around the transition of the nature of artistic creativity in interactive art, especially

in relation to the concept of networking and A-Life.

email: kusahara@renga.ntticc.or.jp, kusahara@img.t-kougei.ac.jp

Media: NTSC VHS video, Images from Power Book Duo, Internet connection,

Desktop Mac or PC computer with CD-ROM drive

#Regina Wyrwoll

Goethe in the Net

The Goethe Institute is a world wide German cultural organisation with

about 150 centers in 78 countries in the world. As an independent

association it gets public funding for teaching German language abroad

and building up intercultural dialogue in arts and science. In this

context it works since about 40 years with artists, writers, filmmakers

and scientists, universities, museums, galleries and other partners in

Germany and abroad.

Since about three years Goethe Institute emphasise on mediawork

recognizing that electronic media offer a new platform for communication between cultures and that they are new art venues. Now many institutes are working intensively in creating projects of intellectual debate about new media and internet (f.e. in Buenos Aires "Universes in Universe"), of coproduction in arts films for tv (f.e. "Bauhaus, Texas - the American Artist Donald Judd" for German and American tv), of arts projects on the net ("cyberclipper" a American-German arts project - on the web now http://glows.com/cyberclipper/), of CD-ROM and multimedia. Teleconferencing and live-satelite-TV is getting daily routine. A homepage on the net (http://www.goethe.de) exists since one year. There the first language courses will be available soon. As one of the major goals of Goethe Institute is to dialogue with local artists the creation of art work on video, real installation or art in the internet is a subject of important matters. Media art exhibitions combined with symposia (e.g. in Turin and Madrid), media exhibitions like TELEPOLIS (Luxemburg) are part of the communication work through the Goethe Institute. Media enlarge the audience for art and artists, it cannot replace traditional artforms. The Goethe-Instute is trying to combine the traditional way of cultural communication with the potentials of new technologies, always in close relation with the media environment of the local partners.

CV

Regina Wyrwoll studied history of art in Cologne and Hamburg. She got director of a tv production company in Hamburg, author of a number of feature films on contemporary art, museums and culture in general for the two German public tv stations. After moving to Bonn she worked several years as an arts correspondant of major German pubications. For two years she was chief editor of an arts magazine called "Kunst Intern". Up to now she publishes in "S|ddeutsche Zeitung" and "Frankfurter Allgemeine Zeitung" specialised on cultural policies and art. Since 1993 she is building up a media department in the headquaters of Goethe Institute in Munich.

email: wyrwoll@goethe.de

Media: Video VHS PAL, Overhead Projector

ACM Multimedia'96 Hynes Convention Center

November 18 - 22, 1996 Boston, MA, USA

Storytelling after cinema II

Friday, November 22, 9:00 - 10:30 am, Room 306, Panel 7,

Moderator: Annika Blunck

Panelists: Graham Weinbren , Katherine Phelps, Perry Hobermann , KP Ludwig John

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#Annika Blunck

Intervention in Narrative Spaces.

Interactive art arouses hopes, since it creates possibilities to conjure and discover new continents. Interactive art maintains the demand for changes fortified by the conviction to transform the consumer into an activist, into an explorer of digital worlds. Cinema is not bound to its original space anymore. But when interactive stories are told, they do not have a beginning or an end. In each moment the situation can change because each decision causes a change to the entire condition:

Interactive stories are told AND written at the same time. The user discovers the work while he reconstructs it. Certainly a plot develops between the artist, the idiosyncratic work and the viewer. The plot forms itself in those black boxes, in those claustrophobic spaces, that trigger new phobias, in order to not destroy the putative immersion and to maintain the illusion of the endlessness. Seen against this background it is compelling and exciting to ask how the nature of narration has changed by using new media, especially compared to the happening and action art of the sixties. Is it possible for a work laid out on an interactive structure to

tell a story? What demands are made on the narrative and what necessity exists for the contemporary viewer?

CV

Annika Blunck born 1967, studied art history, English and Scandinavian

philology in Kiel, Berlin and London. Project development of international

exhibitions with focus on media art involved in various projects of the ZKM MultiMedia Lab working as a research assistant in the ZKM Institute for Visual Media.

email: blunck@guido.zkm.de

Media: 2 Slide projectors (if possible superimposition projectors), PAL VTR

#Grahame Weinbren

What is narrative and why do we need it?

These are large questions, that have been addressed time and again in the last few millennia. Like anything of any complexity or abstraction, there will be a phalanx of answers that come together in different ways and that apply to different situations. Of course I won,t attempt to answer these questions. But I will suggest that the kinds of answers that are given to them can be divided into a few categories:

- answers that consider the effect of a work on its audience

- answers that consider the structure of narrative itself

- answers that consider the needs or desires of the makers

When I think about a concept of interactivity in narrative, as a maker I find myself focusing on the third question: what can I do that I couldn,t do before? what kinds of stories can I tell, is it a subset of the non-interactive story, or a superset, or something else altogether?

But when I,m actually involved in the construction of an interactive piece, I sometimes find myself in the territory of the first category, a region where I,m somewhat uncomfortable. This is the place where I need to ask what the reaction of a viewer might be at some point in the story, so that I can implement a way to gauge his or her response for the work to act on it. I would rather consider the shape or architecture of the work, assess to what extent it corresponds to my inner impulses, and hope that once it is made, it will become transformed, separated from the mundanity of my intentions, and say something larger, or at least something else. So why, as a filmmaker, am I interested in making interactive narratives?

CV

Grahame Weinbrens films since 1972 and include over 10 short films and Umbrellas, a feature documentary made with Henry Corra and Albert Maysles. First prize at 1996 Festival of Films on Art, Film Exhibitions and Performances. 1976-86 throughout US and Europe, Lectures, Panels & Presentations since 1982 on Interactivity and Art all over the world including Israel, Finland, Russia, Germany, Holland, Australia, and throughout the USA.

Writings on Interactivity and Art-Making, and on other forms of

cinema, published in English, French and German, and on the World Wide

Web Editor since 1986 of Millennium Film Journal.

Grants include NEA, NYSCA, Mass Council, Art Matters, Jerome

Foundation, Valley Film Works, Art Matters, Checkerboard, NYFA (1989)

Teaching Graduate Computer Art and MFA Photo Departments of School of

Visual Arts.

email: string@interport.net, http://www.sva.edu/MFJ

Media: VHS playback (monitor is preferable to projection) and Mac using

Powerpoint software (projection is preferable to monitor).

#Katherine Phelps

Story Shapes for Digital Media

My paper discusses the six digital story shapes: what they are, how they assist in managing the storytelling task, and how they influence and facilitate the fuller application of the storytelling elements of plot, character and theme within digital media. In this way I hope to begin the process of enriching the aesthetic tools available for the creation of an entirely digitally based narrative form.

It occured to me that if I could make the basic story structures for digital media visible, then I could more easily keep the structure under control and I would be in a better position to examine how standard storytelling elements can be mapped onto the media. From personal experience I came up with six digital story shapes which formed a model that I then applied to numerous CD-ROMS and hyperfiction sites. I did allow that some CD-ROMs were likely to be a combination of shapes. My investigations seem to indicate that I have a workable model. To further my understanding I set myself the task of writing stories to fit each of these shapes. I also shared this information and my experiences with students in my class, Writing for Multimedia, at the Royal Melbourne Institute of Technology TAFE. With the structural concerns under control everyone found that they could focus on the subtleties of plotting, character development and theme once again, so that they were creating more than just choose-your-own adventures, but an involving storyscape. I have an example of their efforts.

CV

Katherine Phelps is a PhD candidate at the Royal Melbourne Institute of Technology where she is studying the principles of narrative forms for application to digital media and thereby provide more opportunities for the enrichment of storytelling within this field. Her BA and MFA are both in creative writing. She is the author of the book Surf's Up: Internet Australian Style which has had three printings in Australia and two in New Zealand in its first year of release. Her short stories and articles have been published in numerous publications including Leonardo's online magazine. She has presented papers at the Asia Pacific World Wide Web Conference, the Sapporo Hyperlab at the University of Hokkaido, the Australian National Book Council and the Melbourne Writers' Festival. Katherine Phelps is part of the Australian Xanadu and Hyper-G research teams and created the first commercial Web and Gopher site in Australia, this site features fictional work. She has previously studied with Hugo and Nebula award winning writer, Joanna Russ, and American National Book Award winner and Pulitzer Prize committee member, Charles Johnson.

email: muse@glasswings.com.au

Media: A computer that can read PC disks, Netscape and computer projection equipment.

#Perry Hobermann

The Open End of Interaction

On some level, interactivity would seem to conflict with the notion of

storytelling - in an interactive experience, a story isn't being told to

anyone; if there's a story at all, it's being lived by the participants.

Does a story require a teller? And when you're inside a story, is it useful

to call it a story at all? Or is it simply an experience that you might tell a story about afterwards? Perhaps we could talk about "storyliving".

But what would this be?

Maybe there are alternatives to the closed system of branching multiple-choice multimedia. Do designers have to anticipate every possible

event in advance? The techniques of artificial life seem to suggest an

alternative. Here a process is started and allowed to develop according to

evolutionary pressures, without attempting to predict any particular

outcome. This would appear to have potential, but it has so far mainly been

used with a pretense of neo-scientific objectivity to develop simple

organisms. Could it be used to open up a space of higher-level narrative or

interaction?

CV

Perry Hoberman is an installation and performance artist who works with a variety of technologies, ranging from utterly obsolete to seasonably

state-of-the-art. He moved to New York in the late 70s, attended the

Whitney Independent Study Program in 1978, and began exhibiting in the

early 1980s. His installation "Bar Code Hotel" was awarded the top prize at

the 1995 Interactive Media Festival in Los Angeles, and has been shown

widely in Europe. "Faraday's Garden", a viewer-activated appliance

installation, has also been exhibited widely. Other ongoing projects

include a variety of stereo 3D installations and performances, and "The

Empty Orchestra Cafe, a radical Neo-Karaoke Bar. Hoberman currently teaches in the graduate Computer Art Department at the School of Visual Arts in New York. Before that, he was the Art Director at Telepresence Research, a company specializing in virtual reality and telepresence installations for arts and industry. His work is represented by Postmasters Gallery.

hoberman@bway.net

Media: Video, Slides

#KP Ludwig John

Play instead of Telling Stories

We do not tell stories anymore, we create experience playgrounds.

The decisive aspect of digital media works is the potential of their interactive structure. The CD-ROM as a concept also envisages for the potential of mass distribution, which finally means reception of identical works in very diverse and individual environments. The producer gives up almost all controll about the circumstances of possible reception of his audiovisual interactive work. Still, even in the rather standardized environment of CD-ROM there is a variety of possible interfaces available:

- add communication possibilities between users to your work

- make things playful, rich in variations, inspire imagination

- demand personal engagement of the user:

For instance, the use of voice level (mike) instead of slight handmovement (mouse) as a navigation tool can become quite a physical event.

CV

KP Ludwig John, born1961, studied in Leipzig (GER) and Utrecht (NL) MFA.

Co-founder of the media arts festival MedienbiennaleLeipzig.

93/95 Teacher at the media arts department of the Academy of Graphics and BookArt Leipzig. 1993 artist in residence at the Banff Centre for the Arts, currently living and working in Munich. After doing interactive installation work KP Ludwig John focused for the last three years entirely on artistic interactive multimedia productions for mass distribution.

The CD-ROM "Die Veteranen" received 3 EMMA awards 1995, the Babelfish at Interactiva95 (Potsdam) and the "Recommendatory Price" at ARTEC95 (Nagoya). The CD-ROM "Venetian Deer" - to be published Jan 97 - received already 2 EMMA awards at the Book Fair Frankfurt 96.

email: 100116.617@compuserve.com, http://www.systhema.de/veteranen

Media: Power Mac 7500, System 7.5 QT, projector, speakers, microphone connected to computer, CD-Rom work needs mic as interface, Internet.

ACM Multimedia'96 Hynes Convention Center

November 18 - 22, 1996 Boston, MA, USA

Architecture, Time and Fragmented Space

Friday, November 22, 9:00 - 10:30 am, Room 303, Panel 8,

Moderator: Peter O. Anders

Panelists: Wolfgang Strauss, Dirk Luesebrink, Gerhard Schmitt, Gerhard Eckel

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#Peter. O. Anders

MUD Archeology

Multi-user Domains (MUDs) are mediated environments on the Internet. Originally intended for role playing games such as Dungeons and Dragons, they have since developed into elaborate social settings serving on-line social and professional communities. Although the bulk of the MUDs currently are text-based virtual realities, the advent of HTML,VRML and Java networking software will bring rich graphic and three-dimensional settings for social interaction.

Preliminary efforts in evoking realistic environments (the Palace, World Chat and Alphaworld) have proven disappointing. The ephemeral quality of these cybereal communities argues for an architecture which is dynamic, responsive to its social needs and its subjective nature. While some of these text-based environments have a specific spatial structure, their descriptions are highly subject to the user's interpretation. Current graphic MUDs, on the other hand, lose this depth of reading by plainly illustrating architectural environments. In many cases the spatial illustration comes at the expense of poetry.

In the spring and fall semester of 1995, graduate and undergraduate students at the New Jersey Institute of Technology's School of Architecture surveyed ten MUDs on the Internet. The students were asked to become citizens of their selected MUDs and to explore the spatial metaphors provided by the text. While these scenarios were based on the linkages found in the adjacency models, their intent was to portray the poetry of the text as an architecture. The development of a truly spatial cyberspace will draw on the skills of many disciplines including the fine arts, theatre and architecture. As spatial MUDs are being created, the input of these

skills will be vital to creating a rich, cultural setting for future societies.

CV

Peter Anders is architect and educator with record of accomplishment in: application and teaching of information technologies in design, leadership of a wide variety of projects, publication in architectural theory, including the broad-based implications of electronic technologies for the profession.

Peter Anders is Acting Director of NJIT Graduate School of Architecture, New Jersey Institute of Technology. Teaching Experience: Directed design studio research on Multi-User Domains on the Internet. New Jersey Institute of Technology, Fall1995.

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Media: Video, Internet via beamer

#Wolfgang Strauss

The Dice Time of Dynamic Space

Digital techniques have re-defined the role of design and the mediation of its contents. New concepts of space are investigated in their capacity to mediate knowledge and to depict the spatial dynamics. With the "Responsive Workbench" or the "Virtual Balnce" the user, spectator becomes part of the system in a non-immersive way. He/she is embedded in the real space as well as in virtual space. The Object is reoriented in reference to the subject. Space sheds its unity, it is composed of fragments of different viewpoints. Media using interactive or distributed communication technologies influence and change both human perception and artistic design. Virtual media open unlimited space, they handle the disintegration of space and the narratation of non-linear stories. (0&1) into interactive actions in space and time. Changing from observers into co-actors people can interfere in their virtual environment and influence it. The interface becomes the very heart of the work, the key to the entire apparatus that it drives. Interactive systems introduce multisensory experience, potentially mobilizing all the senses. But as ingenious as an interface may be, it cannot be reduced to its instrumental or ergonomic features, for it is also the nexus of metaphorical and conceptual issues. Interaction is communication in real time. Digital media emphasize the idea of interactivity, people's own experience of simulation on their body. The body is exposed to a new perception of space. Yet interactive operating procedures and interface experimentation also provide the possibility of rethinking the very relationships between sense organs, rethinking their roles.

CV

Wolfgang Strauss is architect and professor for interactive media studies at the School of Fine Arts Saarbrücken, Germany. Strauss studied Architecture at the Academie of Fine Arts Berlin and has held teaching positions at the HDK and at the KHM Media Art School Cologne. He was co-founder of ART+COM, Berlin in 1988. Strauss and his partners' (Monika Fleischmann, Christian A. Bohn) work has been included in exhibitions and festivals of new media art worldwide, awarded in 1992 at Ars Electronica with the Golden Nica, nominated for the Unesco Award 1993.

email: strauss@gmd.de, http://viswiz.gmd.de/projects/art/art.html

Media: S-VHS PAL Video, 2x Slidesprojector, Internet via beamer

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#Joachim Sauter, Dirk Luesebrink

Time in Space - Space in Time

VR enables us to communicate information in space. A main question thereby is which metaphors are we developing to organise this information and which metaphors will be developped to navigate and interact in this infospace. Two main approaches to this question are discussed in the project " Space in Time - Time in Space." As an example to visualise this two strategies we have choosen the organisation of historical Filmmaterial according to the place and time where an when they were shot.

The first, and very common approach is to use a copy of the real world as an organisation-metaphor. In our project we are using several historical conditions of the Potsdamer Platz in Berlin in form of 3-D models and areal shots, ("Space in Time")

The second approach is based on the parametrisation of the information and a specifique strategie to transform this parameters into a spacial object. In our case the infoarchitecture is created from the camera attributes associated to a certain film sequence. Atributes used are position/movement, point of interest and field of view. These leads to structures representing Time-Space which can be read and interacted with by the user intuitivly. (Time in Space")

These Filmobjects are then organised according to their place and time of origin in the historical citylayers. By time-traveling in this cityspace the user is able to navigate to the filmobjects and to interact with their timespace-structure in

order to understand spacial and historical relationships.

CV

Dirk Luesebrink, born 1964, studied computer science at Berlin Technical University and was a Cofounder of ART+COM, Berlin. Together with Joachim Sauter he was awarded at the Ars Electronica '92 with their interactive installation "Zerseher".

email: crux: artcom.de

Joachim Sauter is Gestalter, Creative Director, Cofounder and Chairman of ART+COM, Professor for Digital Media at the Academie of Fine Arts, Berlin.

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http://www.artcom.de/projects/timespace/timespace.en.shtml

Media: Video, Internet via beamer

#Gerhard Schmitt

Real Time Space, Algorithmic Space

I would like to report on SCULPTOR, a real time space generator, and

TRACE, an interactive algorithmic instrument for building non-physical urban spaces in the Internet. Designing, programming, and working with SCULPTOR has changed the perception of space, time, and design. It is more than a traditional CAD instrument in that it changes the process of design itself. On the scale of building objects, creating spaces from the inside out in real time is a quite natural activity even for non-architects. The results

are surprising in that the generated spaces are different from spaces designed by hand or with traditional CAD tools: they are conceptually richer and spatially more interesting.

(David Kurmann http://caad.arch.ethz.ch/~kurmann/sculptor/short.html).

While these are experiences from working with more than 200 students

so far, the concept of interactive algorithmic space has a potentially even larger base of users. In the exhibition "The Archaeology of the future City" in the Tokyo Museum of Contemporary Art we built the interactive installation TRACE. The energy that creates TRACE is the motivation for the individual visitor or client to represent her or himself by leaving TRACEs and to read and interpret TRACEs of other visitors. The space that can

be experienced represents the state of the system at the time of the login. It emerges through a constant information exchange between a database, that stores and indexes the TRACEs through an event agent, and a geometry generator which displays the spaces.

(Florian Wenz and Fabio Gramazio: http://caad.arch.ethz.ch/trace).

CV

Prof. Gerhard Schmitt, Chair for Architecture and CAAD at the Swiss Federal Institute of Technology, ETH Zürich, offers courses in design computing and programming with emphasis on new design methods and media. He has previously taught Computer Aided Architectural Design at Carnegie Mellon University and as a visiting professor at Harvard

University. Schmitt has established a new CAAD curriculum and infrastructure at ETH Zürich. He is Dean of the Faculty and the Department of Architecture for the academic years of 1994/96. He established the Architectural Space Laboratory at ETH, where he and his junior

faculty research group develop a virtual design environment for architecture. His main research interest is the development of intelligent design support systems. Schmitt has authored and edited several books, the latest being "Architectura et Machina".

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Media: Video, Internet via beamer

#Gerhard Eckel

Virtual Architecture as Medium for the Exploration of Music

The articulation of architectural and musical space is motivated by a compositional approach centered around the idea of open form. In this context, composition is not any longer understood as an activity yielding a musical text, which needs to be interpreted by musicians in order to become perceivable by the audience. Music is not any longer conceived in form of finite units but in terms of models capable of producing a potentially infinite number of variants. Performing such music is closer to exploring an object or space than to interpreting a text. The problem of open form, which has a long tradition in twenties century music, is

reformulated through this conception of composition inspired by possibilities offered bynew media technology. By the means of navigable visual representations of architecturally organised space, the audience is enabled to interactively explore an open composition. Sensible connections between the visible and audible space guide the exploration and suggest directions to be taken.

CV

Gerhard Eckel is trained as a musicologist, composer, and sound engineer. He carried out his thesis research work in the field of psychoacoustics at the Sound Department of the Austrian Academy of Sciences. In 1989, he received his doctorate in musicology from the University of Vienna. Research grants brought him to the Institute for Sonology at the

University of Utrecht and to IRCAM, the contemporary music department of the PompidouCenter in Paris. As a researcher he specialized on computer music software technology. He worked for 7 years at IRCAM where he directed the Interfaces and Sound Representation Group from 1994-96. His main interest, the articulation of art and technology, is also the driving force behind his compositional work which is focused on music installations. In 1995 he spent 3 months as composer in residence at the Banff Centre for the Artsworking on a VR-based music installation. This summer he joined the Visualization and Media Systems Design Group of the German National Research Center for Information Technology (GMD) where he is working on integrated simulation of image and sound in

VR applications.

email: eckel@gmd.de

Media: PowerMac, System 7.5, Quicktime, CD-ROM, 24 Mb DRAM, min 500 Mb diskspace. Stereo amplifier (e.g. 2x 100W) + 2 HIFI loudspeakers.

Workshop WP2: (Multi)Media Processors: System Architectures and Applications

Summary

Multimedia applications include the emerging set of internet-based applications, as well as the more "traditional" applications such as videoconferencing, video on demand, interactive games, education, set-top boxes, ddigital libraries, databases and many others. When considering the hardware/software architecture of multimedia processors, it is important to characterize these applications along various axes. These include: performance requirements (both absolute compute horsepower and real time constraints); memory bandwidth requirements; interfacing requirements (i.e., will they normally be interfacing to cable coaxes, cameras, PCs, and the like); what standards need to be (or already are) in place; preferred/available software development paradigms; and the hardware/ operating system support that is required for cost-efficient implementation of these applications.

Focus

The workshop is intended to focus on the INTERACTIONS between:

- computational/interface requirements of existing and emerging multimedia applications;
- operating system kernel support for multimedia software development; and
- hardware support that is required for such applications and software e.g., architectures of media (audio, video, broadband) processors.

The contents of the discussion will be steered primarily by the interests of the participants and the interactions at the workshop.

Topics of interest include (but are not limited to): multimedia applications and requirements, software architectures and standards, hardware architectures, and prototype systems.

Format

The workshop will consist of a set of talks, interspersed with discussion and panel sessions. It is expected that a selected subset of the proceedings of the workshop will be published as a journal special issue.

Organizer

Contact:

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Workshop WP5: Using Multimedia Assessment Tools

Summary

We have only just begun to understand and appreciate the multiple ways in which a multimedia educational system influences or enhances student learning. A major challenge in assessing the impact of learning technologies relates to the difficulty of gathering, organizing, and presenting useful data in collaborative multimedia environments. Technologically-rich environments demand equally rich data collection and analysis tools--ones capable of examining human-computer interactions as well uses of multiple representations of information. These technologies not only allow evaluators and researchers to gather data from the systems being used, they allow integration of other data as well - observations, interviews, video and audio records, documents produced, and more. The technologies also support researchers as they analyze the data and develop their interpretations of the use of the systems. Viewpoints can be shared among other researchers so that common themes can be synthesized and different insights can be explored. The goal of this workshop is to examine the uses of multimedia assessment tools in order to understand how well multimedia technologies influence learning.

Multimedia applications and programs ranging from simulations to digital libraries and museums will be demonstrated. A series of multimedia assessment tools and analysis techniques will be discussed during the workshop by people from diverse backgrounds (researchers, developers, multimedia publishers, librarians, foundation officers).

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