

Final Program



International Conference on Multimedia

September 30 - October 5, 2001

Fairmont Chateau Laurier
Ottawa, Canada



Sponsored by

the ACM Special Interest Groups

SIGMM, SIGGRAPH, and SIGCOMM



Because of a 3000 persons NATO conference in Ottawa, during the same week as ACM MM2001, it is STRONGLY advised that you make your Hotel reservations by July 31, 2001, and by no means later than Aug. 31, 2001, else you risk commuting to Ottawa from Montreal (120 miles)!!

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WELCOME MESSAGE FROM THE CHAIRS!

Welcome to the 9th ACM Multimedia Conference, held Sept. 30-Oct.5, 2001 in Ottawa, Ontario, the capital city of Canada. This beautiful city is often called "Silicon Valley North" because of the high concentration of major telecommunications and software companies, such as NORTEL, ALCATEL, CISCO, MITEL, COREL, COGNOS, JDS Uniphase, Entrust and many others. The conference complements this setting by presenting and exploring technological and artistic advancements in multimedia. Technical issues, theory and practice, artistic and consumer innovations will bring together researchers, artists, developers, educators, performers, and practitioners of multimedia. This conference is sponsored by NTT, ALCATEL, HP, Fuji-Xerox Palo Alto Laboratory, the Association for Computing Machinery (ACM) and its special interest groups SIGMM, SIGGRAPH, and SIGCOMM.

The conference would not have been a success without help from so many people who have our special thanks. We thank the members of the Technical Program Committee; each one spent countless hours finding experts to review submitted papers, reviewing papers themselves, and helping us select the very best papers. We also thank the paper reviewers who generously spent many hours reviewing papers and providing valuable feedback to the authors. We received over 280 paper submissions and accepted only 45 of them—an acceptance rate of approximately 16%.

We also thank: Forouzan Golshani and all reviewers of the poster paper program who did an excellent job in selecting 22 short papers, from approximately 61 submissions (in addition, the conference Program Committee selected 13 papers from the pool of long papers submitted to be modified for poster presentation; bringing the total number of short papers to 35), presented during the conference reception as part of a focus on research-in-progress; Kien Hua who assembled a set of 22 exciting demonstrations of Multimedia technology; S. (Panch) Panchanathan who organized a very impressive program with 10 tutorials on cutting edge topics.

Brigitte Kerhervé did a tremendous job of selecting three outstanding workshops on emerging topics. Tamer Özsü organized an exciting plenary panel and Ketan Mayer-Patel did again a wonderful job of organizing this year's doctoral symposium. Vincent Oria did a splendid job in chasing the authors and organizing the papers for the proceedings. Roger Price has been working on the electronic proceedings since 1997.

A number of people deserve special thanks for helping with the logistics of the conference. Dwight Makaroff, and François Malric acted as webmasters and ensured that all information pertaining to the conference was available in a timely manner. Michael Vernick spent again much effort in promoting the conference as Publicity Chair. Lisette Burgos, Maritza Nichols, Ann Ferrara and Irene Frawley of ACM played multiple roles in providing valuable assistance. Terry D'Angelo and Marilyn Cheek of OCRI provided invaluable assistance with all the local arrangements and registration, as also did many student volunteers from the University of Ottawa organized by Mojtaba Hosseini. Ersal Aslam and Kenneth Ronkowitz of NJIT Media Services designed the nice proceedings cover.

Lastly, Larry Rowe, the ACM SIGMM Chair, has provided so much valuable assistance with the planning and operation stages of the conference. We are very much in debt to his guidance and leadership for this conference.

General Chairs

Nicolas D. Georganas, Univ. of Ottawa
Radu Popescu-Zeletin, GMD Fokus

Technical Program Chairs

Tzi-cker Chiueh, SUNY Stony Brook
Wolfgang Klas, Univ. of Vienna
Aidong Zhang, SUNY Buffalo

ACM MULTIMEDACIA 2001						
Ottawa, Canada • September 30 to October 5, 2001						
	Sunday September 30	Monday October 1	Tuesday October 2	Wednesday October 3	Thursday October 4	Friday October 5
7:30 - 17:00	Registration <i>Mezzanine Balcony</i>	Registration <i>Mezzanine Balcony</i>	Registration <i>Drawing Foyer</i>	Registration <i>Drawing Foyer</i>	Registration <i>Drawing Foyer</i>	Registration <i>Mezzanine Balcony</i>
8:00						Workshops
8:30 – 10:00	Tutorials <i>Gatineau, Burgundy & L'Orangerie</i>	Tutorials <i>Gatineau, Burgundy & L'Orangerie</i>	Opening Plenary And Keynote <i>Drawing</i>	Plenary Panel <i>Drawing</i>	Technical Sessions <i>Drawing Laurier</i>	<i>Renaissance, MacDonald & Quebec</i>
10:00 – 10:30	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break
10:30 – 12:00	Tutorials <i>Gatineau, Burgundy & L'Orangerie</i>	Tutorials <i>Gatineau, Burgundy & L'Orangerie</i>	Technical Sessions <i>Drawing & Laurier</i>	Technical Sessions <i>Drawing & Laurier</i>	Technical Sessions <i>Drawing & Laurier</i>	Workshops <i>Renaissance, MacDonald & Quebec</i>
12:00 – 13:30	Lunch Break	Lunch Break	Lunch Break	Conference Lunch <i>Adam</i>	Lunch Break	Lunch Break
12:30 – 13:30			ACM SIGMM Meeting <i>Drawing</i>		ACM/Springer MM Sys.J. Editorial Board <i>Drawing</i>	
13:30 – 15:00	Tutorials <i>Gatineau, Burgundy</i>	Tutorials <i>Gatineau, Burgundy</i>	Technical Sessions <i>Drawing & Laurier</i>	Technical Sessions <i>Drawing & Laurier</i>	Doctoral Symposium <i>Drawing</i>	Workshops <i>Renaissance,</i>

	<i>& L'Orangerie</i>	<i>& L'Orangerie</i>				<i>MacDonald & Quebec</i>	
15:00 – 15:30	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break	
15:30 – 17:00	Tutorials <i>Gatineau, Burgundy & L'Orangerie</i>	Tutorials <i>Gatineau, Burgundy & L'Orangerie</i>	Technical Sessions <i>Drawing & Laurier</i>	Technical Sessions <i>Drawing & Laurier</i>	Doctoral Symposium <i>Drawing & Laurier</i>	Workshops <i>Renaissance, MacDonald & Quebec</i>	
18:00 – 18:30		IEEE Multimedia Magazine Editorial Board Meeting <i>Burgundy</i>	Poster Set up <i>Ballroom</i>	ACM MM2002 Organizing Meeting <i>Burgundy</i>	Conference Banquet <i>Grand Hall Museum of Civilization</i>	ACM MM2001 Closing & Torch Passing Meeting <i>Burgundy</i>	
18:30 – 19:00							
19:00 – 20:00				Welcome Reception & Posters <i>Ballroom</i>			
20:00 – 21:30							
21:30 – 23:00							
Internet Café – Frobisher – 8:00 – 18:00							
Demos <i>MacDonald 9:00 – 19:00</i>				Demos <i>MacDonald 09:00 – 16:00</i>			

TUTORIALS

SUNDAY, SEPTEMBER 30, 2001

8:30 am - 5:00 pm MPEG-7: PUTTING IT ALL TOGETHER (*Gatineau Room*)
Adam T. Lindsay, Ed Hartley, Cédric Thiénot
Lancaster University, UK and Expway, France

8:30 am - 12:00 pm WIRELESS SOFTWARE DESIGN FOR HANDHELD DEVICES (*Burgundy Room*) - **CANCELLED**
Qusay H. Mahmoud
Simon Fraser University, Canada

8:30 am - 12:00 pm PRACTICAL DIGITAL LIBRARIES OVERVIEW (*L'Orangerie Room*) **CANCELLED**
Edward A. Fox
Virginia Tech, USA

1:30 pm - 5:00 pm CONTENT ANALYSIS AND CODING OF DIGITAL AUDIO AND VIDEO (*L'Orangerie Room*)
Stephan Fischer
Mobile Video Communication (MVC), Germany

1:30 pm - 5:00 pm MULTIMEDIA MIDDLEWARE (*Burgundy Room*)
Frank Eliassen and Thomas Plagemann
University of Oslo, Norway

MONDAY, OCTOBER 1, 2001

8:30 am - 5:00 pm MULTIMEDIA TECHNOLOGIES & APPLICATIONS IN THE NEW INTERNET (*L'Orangerie Room*)
Nicolas D. Georganas
University of Ottawa, Canada

8:30 am - 12:00 pm SCALABLE MULTIMEDIA SERVERS (*Gatineau Room*)
B. Prabhakaran
University of Texas at Dallas, USA

8:30 am - 12:00 pm OBJECT-ORIENTED MODELING OF MULTIMEDIA APPLICATIONS WITH UML - **CANCELLED** (*Burgundy Room*)
Gregor Engels and Stefan Sauer
University of Paderborn, Germany

1:30 pm - 5:00 pm IP TELEPHONY (*Gatineau Room*)
Ralf Steinmetz and Ralf Ackermann
Darmstadt University of Technology, Germany

1:30 pm - 5:00 pm SMIL2.0: THE NEXT WAVE OF MULTIMEDIA ON THE WEB (*Burgundy Room*)
Lloyd Rutledge
CWI, The Netherlands

TECHNICAL PROGRAM

ORAL PRESENTATIONS

TUESDAY, OCTOBER 2, 2001

8:30 am - 10:00 am Opening Plenary and Keynote (*Drawing Room*)
Chair: Nicolas D. Georganas

Welcome

Nicolas D. Georganas, Radu Popescu-Zeletin, General Conference Chairs

TeleExperience: Communicating Compelling Experience

Ramesh Jain, Co-founder and CTO, PRAJA inc., San Diego, USA

10:00 am - 10:30 am Coffee Break

10:30 am - 12:00 pm Session 1: Video Applications (*Drawing Room*)
Chair: Frank Nack, CWI, The Netherlands

Building an Intelligent Camera Management System

Yong Rui, Liwei He, Anoop Gupta, Qiong Liu

Microsoft Research, Seattle, USA

Improvising Camera Control for Capturing Meeting Activities Using a Floor Plan

Shingo Uchihashi

Fuji Xerox Co., Ltd., Japan

Design of a Virtual Auditorium

Milton Chen

Stanford University, USA

Session 2: Video Processing (*Laurier Room*)

Chair: Wolfgang Effelsberg, University of Mannheim, Germany

Multimedia Edges: Finding Hierarchy in all Dimensions

Malcolm Slaney, Dulce Ponceleon, James Kaufman

IBM Almaden Research Center, USA

Motion-based Segmentation and Contour-based Classification of Video Objects

Gerald Kuehne, Stephan Richter, Mark Beier

University of Mannheim, Germany

On Clustering and Retrieval of Video Shots

Chong-Wah Ngo, Ting-Chuen Pong, Hong-Jiang Zhang

Microsoft Research, China

12:00 pm - 1:30 pm Lunch Break

1:30 pm - 3:00 pm Session 3: Streaming-I (*Drawing Room*)
Chair: Martin Mauve, University of Mannheim, Germany

Stream Enhancements for the CORBA Event Service

Desmond Chambers, Gerard Lyons, Jim Duggan

National University of Ireland, Galway, Ireland

Efficient and Scalable On-Demand Data Streaming Using UEP Codes

Lihao Xu

Washington University, St. Louis, USA

Optimal Delivery of Multimedia Content over Networks

Arthur D. Allen

Burst. Com, San Francisco, USA

Session 4: Image Retrieval (*Laurier Room*)

Chair: James Z. Wang, Penn State University, USA

Adaptive Nearest Neighbor Search for Relevance Feedback in Large Image Databases

P. Wu, B. S. Manjunath

University of California, Santa Barbara, USA

Extraction of Feature Subspaces for Content-Based Retrieval Using Relevance Feedback

Zhong Su, Stan Li, Hongjiang Zhang

Microsoft Research, China

Support Vector Machine Active Learning for Image Retrieval
Simon Tong, Edward Chang
University of California, Santa Barbara, USA

3:00 pm - 3:30 pm Coffee Break

3:30 pm - 5:00 pm Session 5: Video Retrieval and Browsing (*Drawing Room*)
Chair: Nevenka Dimitrova, Philips Research, USA

Learning Video Browsing Behavior and Its Application in the Generation of Video Previews
Tanveer Syeda-Mahmood, Dulce Ponceleon
IBM Almaden Research Center, USA

Multimedia Retrieval through Spatio-Temporal Activity Maps
Gopal Pingali, Agata Opalach, Ingrid Carlbom
Bell Labs, Lucent Technologies, USA

Comparing Discriminate Transformations and SVM for Learning during Multimedia Retrieval
Xiang Sean Zhou, Thomas S. Huang
University of Illinois at Urbana-Champaign, USA

Session 6: Streaming-II (*Laurier Room*)
Chair: Thomas Plogemann, University of Oslo, Norway

Server-Based Smoothing of Variable Bit-Rate Streams
Stergios V. Anastasiadis, Kenneth C. Sevcik, Michael Stumm
University of Toronto, Canada

Distributing Media Transformation over Multiple Media Gateways
Wei Tsang Ooi, Robbert van Renesse
Cornell University, USA

ReMDoR: Remote Multimedia Document Retrieval over Partial Order Transport
Phillip T. Conrad, Armando Caro, Paul D. Amer
Temple University, USA

WEDNESDAY, OCTOBER 3, 2001

8:30 am - 10:00 am Plenary Panel Session (*Drawing Room*)
Moderators: Savitha Srinivasan, Dulce Ponceleon
IBM Almaden Research Center

Is streaming media becoming mainstream?

Panelists:
Dick Bulterman, Oratrix Development
Edward Delp, Purdue University
Alexandros Eleftheriadis, Flavor Software, Inc.
Pablo Fericola, Microsoft
Rob Lanphier, RealNetworks
See-Mong Tan, Apple Computer, Inc.

10:00 am - 10:30 am Coffee Break

10:30 am - 12:00 pm Session 7: Audio Processing (*Drawing Room*)
Chair: Stephan Fischer, MVC, Germany

Pause Concepts for Audio Segmentation at Different Semantic Levels
Silvia Pfeiffer
CSIRO, Macquarie University, Australia

A Compressed Domain Beat Detector Using MP3 Audio Bitstreams
Ye Wang, Miikka Vilermo
Nokia Research Center, Finland

A Robust Audio Classification and Segmentation Method
Lie Lu, Hao Jiang, HongJiang Zhang
Microsoft Research, China

Session 8: Network Games (*Laurier Room*)
Chair: Prashnat Shenoy, University of Massachusetts, USA

Modelling User Behavior in Network Games

Tristan Henderson, Saleem Bhatti
University College London, UK

Consistency Control in Distributed Interactive Media

Jürgen Vogel, Martin Mauve
University of Mannheim, Germany

Coordinated CPU and Event Scheduling for Distributed Multimedia Applications

Christian Poellabauer, Karsten Schwan, Richard West
Georgia Tech, USA

12:00 pm - 1:30 pm Conference Lunch (*Adam Room*)

1:30 pm - 3:00 pm Session 9: Authoring Support (*Drawing Room*)

Chair: Lynda Hardman, CWI, The Netherlands

DEMAIS: Designing Multimedia Applications with Interactive Storyboards

Brian P. Bailey, Joseph A. Konstan, John V. Carlis
University of Minnesota, USA

Designing Annotation Before It's Needed

Frank Nack, Wolfgang Putz
CWI, The Netherlands
GMD-IPSI, Germany

Automatic Detection of 'Goal' Segments in Basketball Videos

Surya Nepal, Uma Srinivasan, Graham Reynolds
CSIRO Mathematical and Information Sciences, Australia

Session 10: Video Storage (*Laurier Room*)

Chair: Lihao Xu, Washington University, USA

System Support for Providing Integrated Services from Networked Multimedia Storage Servers

Ravi Wijayarathne, A. L. Narasimha Reddy
Texas A & M University, USA

Periodic Broadcast and Patching Services - Implementation, Measurement, and Analysis in an Integrated Streaming Video Testbed

Michael K. Bradshaw, Bing Wang, Subhabrata Sen, Lixin Gao, Jim Kurose, Prashant Shenoy
University of Massachusetts, Amherst, USA

Bandwidth Allocation in a Self-Managing Multimedia File Server

Vijay Sundaram, Prashant Shenoy
University of Massachusetts, Amherst, USA

3:00 pm - 3:30 pm Coffee Break

3:30 pm - 5:00 pm Session 11: Coding and Encryption (*Drawing Room*)

Chair: Yong Rui, Microsoft Research, USA

On Error Preserving Encryption Algorithms for Wireless Video Transmission

Ali Saman Tosun, Wu-chi Feng
Ohio State University, USA

Scene Context Dependent Rate Control

Anthony G. Nguyen, Jenq-Neng Hwang
The Boeing Company, USA
University of Washington, USA

An Image Watermarking Technique Using Pyramid Transform

Qiang Cheng, Thomas S. Huang
University of Illinois at Urbana-Champaign, USA

Session 12: Exploiting Video (*Laurier Room*)

Chair: Susanne Boll, University of Vienna, Austria

Panoramic Video Capturing and Compressed Domain Virtual Camera Control

Xinding Sun, Jonathan Foote, Don Kimber, B. S. Manjunath

University of California, Santa Barbara, USA

FlyAbout: Spatially Indexed Panoramic Video

Don Kimber, Jonathan Foote, Surapong Lertsithichai
Xerox, Palo Alto, USA

Spatially Encoded Far-Field Representations for Interactive Walkthroughs

Andrew Wilson, Ketan Mayer-Patel, Dinesh Manocha
University of North Carolina, Chapel Hill, USA

6:30 pm – 9:30 pm Conference Banquet (*Grand Hall, Canadian Museum of Civilisation*)

THURSDAY, OCTOBER 4, 2001

8:30 am - 10:00 am Session 13: Industrial Session (*Drawing Room*)

Chair: Tzi-cker Chiueh, State University of New York at Stony Brook, USA

Computer Technologies that Support Kansei Expression Using the Body

Ryohei Nakatsu, Makoto Tadenuma, Tadao Maekawa
ATR Media Integration and Communication Research Laboratories, Japan

The Virage Video Understanding and Publishing System

Bradley Horowitz
Virage, USA

Audio/Video Authoring Techniques Using SMIL 2.0

Rob Lanphier
Real Networks, USA

Session 14: Media Processing (*Laurier Room*)

Chair: Rainer Lienhart, Intel, USA

Speech-driven Cartoon Animation with Emotions

Feng Yu, Yan Li, Yingqing Xu, Eric Chang, Heung-Yeung Shum
Microsoft Research, China

Scalable Streaming of JPEG2000 Images Using Hypertext Transfer Protocol

Sachin Deshpande, Wenjun Zeng
Sharp Laboratories of America, Inc., USA

Exploring Benefits of Non-Linear Time Compression

Liwei He, Anoop Gupta
Microsoft Research, Seattle, USA

10:00 am - 10:30 am Coffee Break

10:30 am - 12:00 pm Session 15: Multimedia processing (*Drawing Room*)

Chair: Dulce Ponceleon, IBM Almaden Research Center, USA

Bi-level Video: Video Communication for Very Low Bandwidth Networks

Jiang Li, Gang Chen, Jizheng Xu, Yong Wang, Hanning Zhou, Keman Yu, King To Ng, Heung Yeung Shum
Microsoft Research, China

Hierarchical Filtering Method for Content-based Music Retrieval via Acoustic Input

Jyh-Shing Roger Jang, Hong-Ru Lee
National Tsing Hua University, Taiwan

Supporting Audiovisual Query Using Dynamic Programming

Milind R. Naphader, Roy Wang, Thomas S. Huang
University of Illinois at Urbana-Champaign, USA

Session 16: Voice over IP (*Laurier Room*)

Chair: Wu-chi Feng, Ohio State University, USA

A Conference Gateway Supporting Interoperability between SIP and H.323

Peter Steenkiste, Jia-Cheng Hu, Jiann-Min Ho
Carnegie Mellon University, USA

Real-time Voice Communication over the Internet Using Packet Path Diversity

Yi J. Liang, Eckehard Steinbach, Bernd Girod
Stanford University, USA

Intra-Flow Loss Recovery and Control for VoIP
Henning Sanneck, Nguyen Tuong Long Le, Adam Wolisz, Georg Carle
GMD Fokus, Germany

12:00 pm - 1:30 pm Lunch Break

1:30 pm - 5:00 pm Doctoral Symposium (*Drawing Room*)
Chair: Ketan-Mayer-Patel

Creating an Immersive Broadcast Experience
Marcelle A. Steinstra
Twente University

*An Integrated Framework for Interactive Multimedia
Presentations in Distributed Multimedia Systems*
Ramazan Savas Aygun
SUNY – Buffalo, USA

3:00 pm – 3:30 pm **Coffee Break**

Media Transcoding for Pervasive Computing
Zhijun Lei
University of Ottawa, Canada

Supporting QoS for Ubiquitous Multimedia Service Delivery
Yi Cui
University of Illinois at Urbana-Champaign, USA

Priority-Progress Streaming for Quality-Adaptive Multimedia
Charles 'Buck' Krasic
Oregon Graduate Institute, USA

POSTERS/ SHORT PAPERS

Tuesday, October 2, 2001 (*Ballroom*) 7:00 pm - 11:00 pm

Spatial Navigation of Media Streams
Steele Arbeeny, Deborah Silver
Rutgers University, USA

Middle-Tier for Multimedia Synchronization
Ramazan Savas Aygun, Aidong Zhang
State University of New York at Buffalo, USA

Similarity Queries in the DISIMA Image DBMS
Vincent Oria, M. Tamer Özsu, Shu Lin, Paul J Iglinski
New Jersey Institute of Technology, USA
University of Waterloo, Canada
IBM Toronto Laboratories, Canada
University of Alberta, Canada

Classification of Summarized Videos using Hidden Markov Models on Compressed Chromaticity Signatures
Cheng Lu, Mark S. Drew, James Au
Simon Fraser University, Canada

SVG for Navigating Digital News Video
Michael G. Christel, Huang Chang
Carnegie Mellon University, USA

Subband Image Segmentation Using VQ for Content Based Image Retrieval
Junchul Chun, George Stockman
Kyonggi University, Korea
Michigan State University, USA

Robust Digital Image Watermarking Using DWT, DFT and Quality Based Average
Eduardo Fullea, José M. Martínez
Universidad Politécnica de Madrid, Spain

Experiences with MPEG-4 Multimedia Streaming

Hassan Shojania, Baochun Li
ATI Technologies, Inc., USA
University of Toronto, Canada

An Integrated Framework for Face Modeling, Facial Motion Analysis and Synthesis

Pengyu Hong, Zhen Wen, Thomas Huang
University of Illinois at Urbana Champaign, USA

LinStar Texture: a Fuzzy Logic CBIR System for Textures

Hsin-Chih Lin, Chih-Yi Chiu, Shi-Nine Yang
Chang Jung Christian University, Taiwan
National Tsing Hua University, Taiwan

Combined-Media Video Tracking for Summarization

Jianning Hu, Jialin Zhong, Arnit Bagga
Avaya Labs Research, USA

Fast Client-Server Video Summarization for Continuous Capture

John Dixon, Charles B. Owen
Michigan State University

Indexing for Efficient Processing of Noise-Free Queries

Khanh Vu, Kien A. Hua, JungHwan Oh
University of Central Florida

Content-Sensitive Video Streaming Over Low Bitrate and Lossy Wireless Network

Kun Tan, Richard Ribier, Shih-Ping Liou,
Tsinghua University, China
Siemens Corporate Research, USA

A Practical Approach for modeling the quality of multimedia data

Kwan-Sang Na, Doo-Kwon Baik, Pan-Koo Kim
Korea Telecom, Korea
Korea University, Korea
Chosun University, Korea

Ubiquitous Media Agents for Managing Personal Multimedia Files

Liu Wenyin, Zheng Chen, Lin Fan, Yang Rui, Mingjing Li, Hongjiang Zhang Microsoft Research China

Visual Query Tools for Uncertain Spatio-Temporal Data

Katherine Malan, Gary Marsden, Edwin Blake
University of Cape Town, South Africa

Affect Computing in Film through Sound Energy Dynamics

Simon Moncrieff, Chitra Dorai, Svetha Venkatesh
Curtin University of Technology, USA
IBM T. J. Watson Research Center, USA

Preemptive Bandwidth Allocation Protocol for Multicast, Multi-Streams Environments

Nawel Chefai, Nicolas D. Georganas, Gregor V. Bochmann
University of Ottawa, Canada

Image Indexing & Retrieval Using Intermediate Features

Mohamad Obeid, Bruno Jedynak, Mohamed Daoudi
Telecom Lille 1, France
USTL de Lille, France

A Tele-Immersive, Virtual Laboratory Approach based on Real-Time Streaming of 3D Scene Sequences

Stephan Olbrich, Helmut Pralle
University of Hannover, Germany

A New Approach for Rotated Face Detection

Qiang Zhu, Jiashi Chen
ZheJiang University, China

Authoring and Execution Environments for Multimedia Applications Featuring Robotic Actors

Nikitas M. Sgouros, Sophia Kousidou
University of Piraeus, Greece

FIRM: Fuzzily Integrated Region Matching for Content-based Image Retrieval

Yixin Chen, James Z. Wang, Jia Li
Pennsylvania State University, USA

Integrated Broadband Environment for Personalized TV Experience (IBEX) – Implementation Study and Practice
Yoshihisa Gonno, Fumihiko Nishio, Tomohiro Tsunoda, Yasuaki Yamagishi, Sony Corporation, Japan

Mitigating Impact of Starting New Session in Zoned Disk
Youjip Won, Kyeongsun Cho, Seung-Min Park
Hangyang University, Korea
ETRI, Korea

A New Foreground Extraction Scheme for Video Streams
Zhengping Wu, Chun Chen
Zhejiang University, China

Automated Authoring of Coherent Multimedia Discourse in Conversation Systems
Michelle X. Zhou, Shimei Pan,
IBM T.J. Watson Research Center, USA

Model-based Face and Lip Animation for Interactive Virtual Reality Applications
M.D. Bondy, Emil M. Petriu, Marius D. Cordea, Nicolas D. Georganas, Dorina C. Petriu, Thomas E. Whalen
University of Ottawa, Canada
Carleton University, Canada
Communications Research Centre, Canada

Personalizing Video Recorders using Multimedia Processing and Integration
Nevenka Dimitrova, Radu Jasinschi, Lalitha Agnihotri, John Zimmerman, Thomas McGee
Philips Research, USA

Digital Audio Watermarking Based-on Multiple-bit Hopping and Human Auditory System
Changsheng Xu, Yongwei Zhu, David Dagan Feng,
University of Sydney, Australia
Kent Ridge Digital Labs, Singapore

Motion Based Object Tracking In MPEG-2 Video Stream For Perceptual Region Discrimination Rate Transcoding
Javed I. Khan, Zhong Guo, Wansik Oh
Kent State University, USA

Automated Basis-View and Match-Point Selection for the ArchVision RPC Image-based Model
Charles S. Carpenter, W. Brent Seales, Christopher Jaynes, Randall Stevens
University of Kentucky, USA
ArchVision, USA

Technique for Eliminating Irrelevant Terms in Term Rewriting for Annotated Media Retrieval
Youngchoon Park, Forouzan Golshani, Sethuraman Panchanathan, Pankoo Kim
Roz Software Systems, USA
Arizona State University,
Chosun University, Korea

The Evolutionary Sound Synthesis Method
Jônatas Manzolli, Adolfo Maia, Jose Fornari, Furio Damiani,
University of Campinas, Brazil

DEMONSTRATIONS

MacDonald Room

Tuesday, October 2, 9:00 am - 7:00 pm

Wednesday, October 3, 9:00 am – 4:00 pm

Software Systems for Virtual University Operations
Timothy K. Shih
Tamkang University, Taiwan

Interactive Media on Demand: Generic Recording and Replay of Interactive Media Streams
Volker Hilt, Martin Mauve, Jurgen Vogel, Wolfgang Effelsberg
University of Mannheim, Germany

Demonstration of A Distributed MPEG-7 Video Search and Retrieval Application in the Educational Domain
Mark van Setten, Erik Oltmans
Telematica Instituut, Netherlands

Portrait Video Phone
Jiang Li, Gang Chen, Keman Yu, Yong Wang, Kaibo Wang, Jizheng Xu, Hanning Zhou, King To Ng, Lijie Wang, Heung Yeung Shum
Microsoft Research, China

Content-based Retrieval Applications on a Common Database Management System

Naoko Kosugi, Go Nishimura, Junji Teramoto, Kazuyoshi Mii, Makoto Onizuka, Seiichi Kon'ya, Akira Kojima, Ryoji Kataoka, Takashi Honishi,
Kazuhiko Kushima
NTT Cyberspace Labs, Japan

A Flexible Image Retrieval and Multimedia Presentation Management System for Multimedia Databases
Shu-Ching Chen, Mei-Ling Shyu, Xia Jin, Qiong Chen, Chengcui Zhang
Florida International University, USA
University of Miami, USA

A Broadband Web-based Application for Video Sharing and Annotation
Bruno Emond, Martin Brooks, Arnold Smith
National Research Council of Canada, Canada

vCOM: Virtual Commerce in a Collaborative 3D World
Xiaojun Shen, Saeid Nourian, Isabelle Hertanto, Nicolas Georganas
University of Ottawa, Canada

Java Multimedia Telecollaboration
Jauvane C. de Oliveira, Francois Malric, Dongsheng Yang, Saeid Nourian, Nicolas D. Georganas
University of Ottawa, Canada

Demonstration of Improved Multimedia Streaming by Using Content-Aware Video Scaling
Avanish Tripathi, Mark Claypool
Worcester Polytechnic Institute, USA

PBIR: Perception-Based Image Retrieval – A System that Learns Subjective Image Query
Edward Chang, Kwang-Ting Cheng, Larry Lai, Beita Li, Tony Wu, Yi-Leh Wu
University of California, USA

Indexing and Retrieval of 3D Models Aided by Active Learning
Cha Zhang, Tsuhan Chen
Carnegie Mellon University, USA

Resource Adaptive Netcentric Systems: A Case Study with SONET - A Self-Organizing Network Embedded Transcoder
Javed I. Khan, Seung S. Yang, Qiong Gu, Darsan Patel, Patrick Mail, Oleg Komogortsev, Wansik Oh, Zhong Guo
Kent State University, USA

Collaborative Virtual Environments for Training
Majtaba Hosseini, Nicolas D. Georganas
University of Ottawa, Canada

Real-Time Personalized Sports Video Filtering and Summarization
Di Zhong, Raj Kumar, Shih-Fu Chang
Columbia University, USA

MEPG-LMRP: Implementing Adaptive Streaming of MPEG Videos for Interactive Internet Applications
S Boll, W. Klas, M. Menth, C. Heinlein
University of Vienna, Austria
University of Wuerzburg, Germany
University of Ulm, Germany

SARI: Self-Authentication-and-Recovery Image Watermarking System
Ching-Yung Li, Shih-Fu Chang
IBM T.J. Watson Research Center, USA
Columbia University, USA

IMKA: A Multimedia Organization System Combining Perceptual and Semantic Knowledge
Ana B. Benitez, Shih-Fu Chang, John R. Smith
Columbia University, USA
IBM T. J. Watson Research Center, USA

Universal Tuner: A Video Streaming System for CPU/Power-Constrained Mobile Devices
Richard Han, Ching-Yung Lin, John Smith, Belle Tseng, Vida Ha
IBM T. J. Watson Research Center, USA

ELM-N: E-Learning Media Navigator
Chitra Dorai, Parviz Kermani, Avare Stewart
IBM Thomas J. Watson Research Center USA

Super Mbox: An Efficient/Effective Content-based Music Retrieval System
Jyh-Shing Roger Jang, Hong-Ru Lee, Jiang-Chun Chen
National Tsing Hua University, Taiwan

Periodic Broadcast and Patching Services - Implementation, Measurement, and Analysis in an Internet Streaming Video Testbed
 Michael K. Bradshaw, Bing Wang, Subhabrata Sen, Lixin Cao, Jim Kurose, Prashant Shenoy, Don Towsley
 University of Massachusetts, USA

WORKSHOPS

Friday, October 5, 2001

WORKSHOP 1: MULTIMEDIA INFORMATION RETRIEVAL (*Renaissance Room*)

8:00 am - 8:10 am Opening Session

8:10 am - 9:10 am Session 1: Indexing and Searching
 Chair: K. Selcuk Candan

Similarity Search in Metric Databases through Hashing
 Claudio Gennaro, Pasquale Savino, Pavel Zezula
 IEI-CNR Italy
 Mazarik University, Czech Republic

Parallel Traversal of Signature Trees for Fast CBIR
 Aaron Davidson, John Anvik, Mario A. Nascimento
 University of Alberta, Canada

Spatial Relationship Modeling and Indexing for XML Multimedia Data Retrieval
 Byungwoo Kim, Venu Chakilam, Jong P. Yoon
 University of Louisiana at Lafayette, USA

9:10 am - 10:10 am Session 2: Searching and Information Extracting
 Chair: Noburu Babaguchi

Alternating Feature Spaces in Relevance Feedback
 Fang Qian, Mingjing Li, Wei-Ying Ma, Fuzong Lin, Bo Zhang
 Tsinghua University, China
 Microsoft Research China

Multimedia Information Services Enabling: An Architectural Approach
 Erik Boertjes, Willem Jonker, Jeroen Wijnands
 KPN Research, Netherlands

Automatic Location of Text in Video Frames
 Xian-Sheng Hua, Xiang-Rong Chen, Liu Wenyin, Hong-Jiang Zhang
 Microsoft Research China

10:10 am - 10:30 am Coffee Break

10:30 am - 11:30 pm Session 3: Image Retrieval I
 Chair: Henning Mueller

A Novel Region-Based Image Retrieval Method Using Relevance Feedback
 Feng Jing, Bo Zhang, Fuzong Lin, Wei-Ying Ma, Hong-Jiang Zhang
 Tsinghua University, China
 Microsoft Research China

Support Vector Machine Pairwise Classifiers with Error Reduction for Image Classification
 Kingshy Goh, Edward Chang, and Kwang-Ting Cheng
 University of California at Santa Barbara, USA

Shaped-Based Image Retrieval by Spatial Topology Distances
 Hsin-Chang Yang
 Chang-Jung University, Taiwan

11:30 am - 12:30 pm Session 4: Image Retrieval II
 Chair: Edward Chang

A Statistical Correlation Model for Image Retrieval
 Mingjing Li, Zheng Chen, Liu Wenyin, Hong-Jiang Zhang
 Microsoft Research China

Fast Image Indexing Based on JPEG2000 Packet Header
 Chuping Liu, Mrinal.K.Mandal

University of Alberta, Canada

A Web-Based Evaluation System for Content-Based Image Retrieval

Henning Mueller, Wolfgang Mueller, Stephane Marchand-Maillet,
David Squire, Thierry Pun
University of Geneva, Switzerland
Monash University, Australia

12:30 pm - 2:00 pm Lunch

2:00 pm - 3:00 pm Invited Talk
Chair: K. Selcuk Candan

Multimedia IR in Context

Sharon Flank, CTO & VP-Technology, eMotion, Inc.

3:00 pm - 3:20 pm Coffee Break

3:20 pm - 4:40 pm Session 5: Video Retrieval
Chair: Mario Nascimento

Segmentation of Goods Video Based on Video Caption

S.Takao, Y.Ariki and H.Matsumoto
Ryukoku University, Japan
Sumitomo Electric Industry Co., Japan

Feature Extraction and Content Analysis for Sports Videos Annotation

J. Assfalg, M. Bertini, C. Colombo, A. Del Bimbo
University of Florence, Italy

Detection of Identical Events from Broadcasted Sports Video by Comparing Camera Works

Yukinobu Yasugi, Noboru Babaguchi, Tadahihiro Kitahashi
Osaka University, Japan

An Attribute Based News Video Indexing

Ichiro Ide, Reiko Hamada, Shuichi Sakai, Hidehiko Tanaka
National Institute of Informatics, Japan
University of Tokyo, Japan

4:40 pm - 5:00 pm Closing Session

WORKSHOP 2: MULTIMEDIA MIDDLEWARE (*MacDonald Room*)

8:00 am - 8:15 am Welcome Address

Thomas Plagemann and Frank Eliassen
University of Oslo, Norway

8:15 am - 9:15 am Session 1: Opportunities and Challenges for Future Research Activities
Chair: Larry Rowe

Invited talks with representatives from NSF and DARPA

9:15 am - 10:00 pm Session 2: Streaming Services
Chair: Frank Eliassen

A Proxy Architecture for Collaborative Media Streaming

Verena Kahmann, Lars Wolf
University of Karlsruhe, Germany

Streaming Media Middleware is more than Streaming Media

Lawrence A. Rowe
University of California at Berkeley, USA

10:00 am - 10:30 am Coffee Break

10:30 am - 12:00 pm Session 3: QoS Middleware
Chair: Xiaohui Gu

Towards Integrated Runtime Solutions in QoS-aware Middleware

Baochun Li, Dongyan Xu, Klara Nahrstedt

University of Toronto, Canada,
University of Illinois at Urbana-Champaign, USA

Controlling Quality-of-Service in a Distributed Video Application by an Adaptive Middleware Framework

David A. Karr, Craig Rodrigues, Joseph P. Loyall, Richard E. Schantz
BBN Technologies, USA

A Dynamically-Configured, Strategic QoS Management Hierarchy for Distributed Multimedia Systems

Denise Ecklund, Vera Goebel, Thomas Plagemann, Earl F. Ecklund, Jr.
University of Oslo, Norway

The Case for Using Middleware to Manage Diverse Soft Real-Time Schedulers

John Regehr, Jay Lepreau
University of Utah, USA

12:00 pm - 1:30 pm Lunch

1:30 pm – 3:00 pm Session 4: Configuration and Flexibility

Chair: Vera Goebel

Towards Automatically Configurable Multimedia Applications

Hani Naguib, George Coulouris
Cambridge University, United Kingdom

Reifying Communication at the Application Level

Andrew P. Black, Jie Huang, Jonathan Walpole
Oregon Graduate Institute of Science & Technology, USA

Towards Support for Ad-Hoc Multimedia Bindings

Hans Ole Rafaelsen, Frank Eliassen
University of Tromsø, Norway
University of Oslo, Norway

Middleware for High-Performance Multimedia Services

Mauricio Cortes, J. Robert Ensor
Bell Labs, USA

3:00 pm - 3:30 pm Coffee Break

3:30 pm – 4:45 pm Session 5: Position Statements

Chair: Thomas Plagemann

Infopipes for Composing Distributed Information Flows

Rainer Koster, Andrew P. Black, Jie Huang, Jonathan Walpole, Calton Pu
University of Kaiserslautern, Germany
Oregon Graduate Institute, USA
Georgia Institute of Technology, USA

Multimedia Middleware for the Future Home

Reinhard Baier, Christian Gran, Angela Scheller, Andreas Zisowsky
GMD Fokus, Germany

A Framework for Caching Multimedia Objects in the Internet

Roy Friedman, Roman Vitenberg
Technion – Israel Institute of Technology, Israel

A CORBA Based Platform as Communication Support for Synchronous Collaborative Virtual Environment

Stephane Louis Dit Picard, Samuel Degrande, Christophe Gransart, Gregory Saugis, Christophe Chaillou
Université des Sciences et Technologies de Lille, France
France Télécom R&D, France

Coordinating Energy-Aware Adaptation of Multimedia Applications and Hardware Resources

Wanghong Yuan, Klara Nahrstedt, Xiaohui Gu
University of Illinois at Urbana-Champaign, USA

An Event-Driven, User-Centric, QoS-aware Middleware Framework for Ubiquitous Multimedia Applications

Xiaohui Gu, Klara Nahrstedt Gu
University of Illinois at Urbana-Champaign, USA

The Implementation of Middleware Services for QoS-aware Distributed Multimedia Applications

Fabio Panzieri, Marco Rocchetti, Vittorio Ghini
Università di Bologna, Italy

Dynamic Data Path Reconfiguration

Carsten Griwodz, Michael Zink
University of Oslo, Norway
Darmstadt University of Technology, Germany

A Model-Based Service Creation Platform

Wouter B. Teeuw, Dick A.C. Quartel
Telematics Institute, The Netherlands,
University of Twente, The Netherlands

4:45 pm - 5:00 pm Summary and Closing Remarks

Thomas Plagemann, Frank Eliassen
University of Oslo, Norway

WORKSHOP 3: MULTIMEDIA AND SECURITY: NEW CHALLENGES (*Quebec Room*)

8:00 am - 8:15 am Welcome and Introduction to the Workshop

Jana Dittmann
GMD-IPSI, Germany

8:15 am - 9:15 am Session 1: Digital Watermarking Approaches I

Chair: Klara Nahrstedt

On Multiple Watermarking

Nicholas Paul, Sheppard Reihaneh, Safavi-Naini, Philip Ogunbona
Motorola Australia Research Centre, Australia

*A Compressed-Domain Watermarking Algorithm for MPEG Layer 3,
Aspects of Security Infrastructures: Digital Certificates*

D. K. Koukopoulos, Y. C. Stamatiou
Patras University, Greece

Public Watermark Detection – A Framework and the Optimal Detector

Trista Pei-chun Chen, Tsuhan Chen
Carnegie Mellon University, USA

9:15 am - 9:55 am Session 2: Digital Watermarking Approaches II

Chair: Jana Dittmann

Watermarking Security Enhancement Using Filter Parametrization in Feature Domain

M. A. Suhail, M. M. Dawoud
King Fahd University of Petroleum and Minerals, Saudi Arabia

Watermarking Techniques Using the Drawing Exchange Format (DXF) File

Kab Il Kim, Hwan Soo Kang
Myongji University, South Korea

9:55 am - 10:10 am Coffee Break

10:10 am - 10:50 am Session 2: Digital Watermarking Approaches II (cont.)

A New Technique for Authentication of Image/Video for Multimedia Applications

Chih-Hsuan Tzeng, Wen-Hsiang Tsai
National Chiao Tung University, Taiwan

Future Directions

Fred Baker (invited)
Cisco Systems, USA

10:50 am - 11:50 am Session 3: Steganographical Approaches

Chair: Petra Wohlmacher

Reliable Detection of LSB Steganography in Color and Grey Scale Images

Jessica Fridrich, Miroslav Goljan, Rui Du (invited)
SUNY Binghamton, USA

Towards Robust Hidden Watermarking Using Multiple Quasi-Circles

Veena Sridhar, Xiaobo Li, Mario A. Nascimento
University of Alberta, Canada

Steganographic Capacity of Images, Based on Image Equivalence Classes
Klaus Hansen, Christian Hammer, Jens D. Andersen, Lars R. Randleff
University of Copenhagen, Denmark

11:50 am - 1:30 pm Lunch Break

1:30 pm - 2:50 pm Session 4: Applications I
Chair: Rüdiger Grimm

From Pay TV to Pay Streaming – Similarities and Differences
Jörg Schwenk, Tobias Martin, Erik Neumann (invited)
T-Nova GmbH, Technologiezentrum, Germany
Media Transfer GmbH, Germany

PlataJanus: An Audio Annotation Watermarking Framework
Martin Steinebach, Jana Dittmann, Claus Vielhauer
GMD-IPSI, Germany
PLATANISTA GmbH, Germany

A Secure Fingerprint-Based User Authentication for Lotus Notes
Nalini K. Ratha, Jonathan H. Connell, Ruud M. Bolle
IBM Research, USA

A Flexible Content and Context-based Access Control Model for Multimedia Medical Image Database Systems
Sofia Tzelepi, George Pangalos
Aristotelian University, Greece
Computer and Technology Institute (CTI) and Patras Universtiy, Greece

2:50 pm - 3:30 pm Coffee Break

3:30 pm - 4:30 pm Session 5: Applications II
Chair: Jörg Schwenk

Security Requirements for Internet Voting
Rüdiger Grimm (invited)
Ilmenau Technical University, Germany

Securing the First Steps into a New Exciting Multimedia World
Matthias Hollick
GMD-IPSI, Germany

Tamper Resistant Software: Extending Trust into a Hostile Environment
J. R. Nickerson, S. T. Chow, H. J. Johnson
Cloakware Corporation, Canada

4:30 pm - 5:00 pm Summary and Closing Remarks

Jana Dittmann, Petra Wohlmacher, Klara Nahrstedt
GMD-IPSI, Germany
University of Klagenfurt, Austria
University of Illinois at Urbana Champaign, USA

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Mario A. Nascimento, University of Alberta,

Noboru Babaguchi, Osaka University

K Selcuk Candan, Arizona State University

WORKSHOP 2:

Thomas Plogemann, University of Oslo

Frank Eliassen, University of Oslo

WORKSHOP 3:

Jana Dittmann, GMD-IPSI Germany

Klara Nahrstedt, University of Illinois at Urbana-Champaign

Petra Wohlmacher, University of Klagenfurt