2004 IEEE International Conference on Multimedia and Expo (ICME 2004)

June 27 - June 30, 2004
The Grand Hotel, Taipei, Taiwan
http://www.icme2004.org

Final Program

Co-Sponsored by

IEEE Circuits and Systems Society
IEEE Communication Society
IEEE Computer Society
IEEE Signal Processing Society

In cooperation with

Tamkang University, Taiwan
Academia Sinica, Taiwan
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IEEE ICME Website

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Message from the General Chair

On behalf of the Organizing Committee, I would like to welcome you to Taipei, a city of diversity, vigor and endless fun. Many thanks to your participation in the fifth International Conference on Multimedia and Exposition (ICME'04) held on June 27-30, 2004 at the Grand Hotel in Taipei. The theme of ICME'04 is "Multimedia" the New World. With new advances in every area of multimedia research, together with the emergence of PC and workstations as multimedia platforms, and Internet and intranet as multimedia communication backbones, we are experiencing a multimedia revolution in the 21st century. With the explosion of information, and many evolving technologies in information storage, access, and presentation, we also expect information processing and human-computer interface to play a key role in the information age. ICME'04 definitely serves as an important forum for researchers and developers to discuss related issues in the convergence of multimedia technologies and information processing.

ICME'04 is joint event of the Circuits and Systems Society, the Communications Society, the Computer Society, and the Signal Processing Society of IEEE. Many thanks go to Prof. Liang-Gee Chen and Prof. William Grosky who have done a terrific job in organizing the ICME'04 technical program, which covers 4 keynote speeches, 6 tutorials, 265 technical papers to be presented in 12 special and 40 regular technical sessions. ICME'04 is honored to have four world-renowned researchers in multimedia, to deliver the keynote speeches. In addition, Dr. Ton Kalker and Prof. Yun Q. Shi, our tutorial chairs, have also organized six excellent tutorials which cover different aspects of multimedia research.

Finally, I would like to thank the Advisory Board members, Organizing Committee members, keynote speakers, tutorial speakers, authors, participants and industrial sponsors for making ICME'04 a highly successful and beneficial event for all of us. I would also welcome your feedbacks and suggestions about this conference. I hope you will find this event enjoyable, and wish you a pleasant stay in Taipei.

D. T. Lee
General Chair

Message from the Technical Program Chair

On behalf of the Technical Program Committee, we greatly appreciate your participation in the fifth International Conference on Multimedia and Exposition (ICME'04). The theme of ICME'04, "Multimedia" the New World, is a timely and an important one for the research community. This conference provides a forum for scientists and engineers to exchange their technical results and experiences in this fast moving field. This is an invaluable opportunity for the researchers to come together to share the latest findings of their research work.

The 4-day conference consists of a host of programs including Keynote Speeches, Tutorials, Special Sessions, and Technical Sessions. ICME'04 is honored to have four world-renowned researchers in multimedia, Dr. Ya-Qin Zhang of Microsoft U.S.A., Professor Bernd Girod of Stanford University, Dr. Peter de With of Philips, the Netherlands, and Prof. Tsuhan Chen of CMU, to deliver the 4 keynote speeches. In addition, Dr. Ton Kalker and Prof. Yun Q. Shi, who serve as the tutorial chairs, have organized 6 excellent tutorial courses which cover a broad range of research subjects in the multimedia area. We are very proud that all papers accepted into the Technical Program of ICME'04 are of high quality both in breadth and in depth. This year, we received a total number of 850 submissions. The submitted papers are routed to the area chairs for review. The Technical Program Committee selected 564 papers to be presented at ICME 2004. Papers are organized as 207 lectures, 291 posters, 58 in special session, and 8 in demo session.

As Technical Program Co-Chairs of ICME'04, we would like to offer special thanks to the reviewers, and the Organizing Committee members who have spent a lot of their time and effort to make the conference a big success. Our sincere appreciation goes to Professors Ming Liou, Ming-Ting Sun, Heather Yu, and Ching-Yung Lin for their invaluable advice and time spent in making ICME'04 a great conference.

Finally, we would like to thank the Advisory Committee, Keynote Speakers, Tutorial Speakers, Session Chairs, Presenters, participants and sponsors for making this conference a highly successful and beneficial event. Please feel free to provide feedback/suggestions to us to help make next year's conference even more successful. Welcome to ICME 2004 in Taipei.

Liang-Gee Chen
Technical Program Chair

Keynote Speeches

June 28, 09:00 ~ 10:00

Mobile Computing - Platform and Applications

Ya-Qin Zhang, Microsoft Corporate Vice President, Redmond, Washington, USA

Chair: D. T. Lee, Academia Sinica, Taiwan

Abstract

The mobile industry is undergoing a profound transformation in multiple dimensions, from devices to infrastructure to applications and services. New intelligent devices are emerging with powerful CPU, multi-tasking operating systems, and compelling form factors. The continued evolution from 2G/2.5G to 3G and beyond (3GB) will enable converged all-IP networks with high-speed access, multi-radio connectivity, seamless roaming, and new services. While voice continues to be a critical driving factor for synchronous communications, new data-centric applications, such as messaging, gaming, video telephony, push-to-talk, emails, web browsing, location-based service, and corporate data access, create most exciting opportunities for operators, OEM/ODM, developers, consumers, and business in the next wave of mobile computing.

Microsoft's mobile and embedded division has been engaged in developing tools and platforms for over a decade, including the Windows CE operating system, PocketPC, and more recently the Smartphone windows mobile platform. I'll talk about Microsoft's vision, strategy, and roadmap in the mobility space, and share my perspectives on the directions of the industry as a whole. I'll also touch on a few examples of our active research work on mobility and networking across MSR labs, including seamless roaming, mobile media, navigation, and mesh networks.

Biography

Dr. Ya-Qin Zhang is Corporate Vice President of Microsoft Corporation in Redmond, Washington. He is currently responsible for product development of Microsoft's Mobile and Embedded Division, including WinCE operating system, Smartphone, PocketPC, and other Windows Mobile platform and devices.

Ya-Qin Zhang was the Managing Director of Microsoft Research Asia, Microsoft's basic research arm in Asia-Pacific region. From 1994 to 1999, he was the Director of Multimedia Technology Laboratory at Sarnoff Corporation in Princeton, NJ (RCA Laboratories). He was with GTE (now Verizon) Corp. in

Waltham, MA from 1989 to 1994. He has published over 200-refereed papers in leading international conferences and journals, and granted over 50 US patents in digital video, Internet, multimedia, wireless and satellite communications. Many of the technologies he developed have become the basis for start-up ventures, commercial products, and international standards. He serves on the Board of Directors of five high-tech IT companies and various government agencies.

Ya-Qin is a Fellow of IEEE. He was the Editor-In-Chief for the IEEE Trans. on Video Technology from 1997 to 1999, and sits on the editorial boards of seven other professional journals and over a dozen conference committees. He has been a key contributor to the ISO/MPEG and ITU standardization efforts in digital video and multimedia.

June 29, 09:00 ~ 10:00

Distributed Video Coding

Bernd Girod, Stanford University, USA

Chair: Mark Liao, Academia Sinica, Taiwan

Abstract

Distributed coding is a fundamentally new paradigm for video compression, based on Slepian and Wolf's and Wyner and Ziv's information-theoretic results from the 1970s. This talk reviews the recent development of first practical distributed video coding schemes. Wyner-Ziv coding, i.e., lossy compression with receiver side information, enables ultra-low-complexity video encoding where the bulk of the computation is shifted to the decoder. Since the interframe dependence of the video sequence is exploited only at the decoder, an intraframe encoder can be combined with an interframe decoder. The rate-distortion performance is vastly superior to conventional intraframe coding, but there is still a gap relative to conventional motion-compensated interframe coding. Wyner-Ziv coding is also naturally robust against transmission errors and can be used protects the video waveform rather than the compressed bit-stream. In this way, one can avoid the "digital cliff" and achieve graceful degradation under deteriorating channel conditions without the usual layered signal representation.

Biography

Bernd Girod is Professor of Electrical Engineering in the Information Systems Laboratory of Stanford University, California. He also holds a courtesy appointment with the Stanford Department of Computer Science. He serves as Director of Stanford's Image Systems Engineering Program and as Director of the Max Planck Center for Visual Computing and Communication at Stanford. His research interests include networked media systems, video signal compression and coding, and 3-d image analysis and synthesis.

He received his M. S. degree in Electrical Engineering from Georgia Institute of Technology, in 1980 and his Doctoral degree "with highest honours" from University of Hannover, Germany, in 1987. Until 1987 he was a member of the research staff at the Institut fur Theoretische Nachrichtentechnik und Informationsverarbeitung, University of Hannover, working on moving image coding, human visual perception, and information theory. In 1988, he joined Massachusetts Institute of Technology, Cambridge, MA, USA, first as a Visiting Scientist with the Research Laboratory of Electronics, then as an Assistant Professor of Media Technology at the Media Laboratory. From 1990 to 1993, he was Professor of Computer Graphics and Technical Director of the Academy of Media Arts in Cologne, Germany, jointly appointed with the Computer Science Section of Cologne University. He was a Visiting Adjunct Professor with the Digital Signal Processing Group at Georgia Institute of Technology, Atlanta, GA, USA, in 1993. From 1993 until 1999, he was Chaired Professor of Electrical Engineering/Telecommunications at University of Erlangen-Nuremberg, Germany, and the Head of the Telecommunications Institute I, co-directing the Telecommunications Laboratory. He has served as the Chairman of the Electrical Engineering Department from 1995 to 1997, and as Director of the Center of Excellence "3-D Image Analysis and Synthesis" from 1995-1999. He has been a Visiting Professor with the Information Systems Laboratory of Stanford University, Stanford, CA, during the 1997/98 academic year.

As an entrepreneur, Prof. Girod has worked successfully with several start-up ventures as founder, investor, director, or advisor. Most notably, he has been a co-founder and Chief Scientist of Vivo Software, Inc., Waltham, MA (1993-98); after Vivo's aquisition, 1998-2002, Chief Scientist of RealNetworks, Inc. (Nasdaq: RNWK); and, from 1996-2004, an outside Director of 8x8, Inc. (Nasdaq: EGHT).

Prof. Girod has authored or co-authored one major text-book, three monographs, and over 250 book chapters, journal articles and conference papers in his field, and he holds about 20 international patents. He has served as on the Editorial Boards or as Associate Editor for several journals in his field, most recently as Area Editor for Speech, Image, Video & Signal Processing of the "IEEE Transactions on Communications." He has served on numerous conference committees, e.g., as Tutorial Chair of ICASSP-97 in Munich and ICIP-2000 in Vancouver, as General Chair of the 1998 IEEE Image and Multidimensional Signal Processing Workshop in Alpbach, Austria, and as General Chair of the Visual Communication and Image Processing Conference (VCIP) in San Jose, CA, in 2001 and General Chair of the Workshop on Vision, Modeling, and Visualization at Stanford, in 2004.

Prof. Girod has been a member of the IEEE Image and Multidimensional Signal Processing Committee from 1989 to 1997 and was elected Fellow of the IEEE in 1998 'for his contributions to the theory and practice of video communications.' He has been named 'Distinguished Lecturer' for the year 2002 by the IEEE Signal Processing Society. Together with J. Eggers, he is recipient of the 2002 EURASIP Best Paper Award. He will be honored by the 2004 Technical Achievement Award of the European Signal Processing Society later this year.

June 29, 19:00 ~ 20:00

Face Identification by Computer and by Human: Two sides of the Same Coin, or Not?

Tsuhan Chen **(Banquet Speaker)**, Carnegie Mellon University, USA

Chair: Liang-Gee Chen, National Taiwan University, Taiwan

Abstract

Identifying human faces is an important task for multimedia database retrieval. It has also attract much attention in homeland security recently. While human perception is fine-tuned to detect and recognize face images with great precision, existing face recognition algorithms running on most efficient computers perform much worse than humans. Can we learn from human perception to improve the performance of face identification by a computer? Or, is it that such a biologically-inspired approach, or biomimetic, is not a good idea at all? In this talk we will start by introducing some interesting facts in human perception of faces. We will then present examples of image analysis techniques that are inspired by human perception. Comparing these techniques with face recognition algorithms based on conventional pattern recognition techniques, we will outline some promising research directions.

Biography

Tsuhan Chen has been with the Department of Electrical and Computer Engineering, Carnegie Mellon University, Pittsburgh, Pennsylvania, since October 1997, where he is currently a Professor. He directs the Advanced Multimedia Processing Laboratory and the "ITRI Lab at CMU," a collaborative research laboratory sponsored by Industrial Technology Research Institute (ITRI). His research interests include multimedia signal processing and communication, implementation of multimedia systems, multimodal biometrics, audio-visual interaction, pattern recognition, computer vision and computer graphics, bioinformatics, and building collaborative virtual environments. From August 1993 to October 1997, he worked in the Visual Communications Research Department, AT&T Bell Laboratories, Holmdel, New Jersey, and later at AT&T Labs-Research, Red Bank, New Jersey, as a senior technical staff member and then a principle technical staff member.

Tsuhan helped create the Technical Committee on Multimedia Signal Processing, as the founding chair, and the Multimedia Signal Processing Workshop, both in the IEEE Signal Processing Society. His endeavor later evolved into founding of the IEEE Transactions on Multimedia and the IEEE International Conference on Multimedia and Expo, both joining the efforts of multiple IEEE societies. He is appointed the Editor-in-Chief for IEEE Transactions on Multimedia for 2002-2004.

Before serving as the Editor-in-Chief for IEEE Transactions on Multimedia, he also served in the Editorial Board of IEEE Signal Processing Magazine and as Associate Editor for IEEE Trans. on Circuits and Systems for Video Technology, IEEE Trans. on Image Processing, IEEE Trans. on Signal Processing, and IEEE Trans. on Multimedia. He co-edited a book titled Advances in Multimedia: Systems, Standards, and Networks with focus on the ISO MPEG-4 Standard.

Tsuhan received the B.S. degree in electrical engineering from the National Taiwan University in 1987, and the M.S. and Ph.D. degrees in electrical engineering from the California Institute of Technology, Pasadena, California, in 1990 and 1993, respectively. He received the Charles Wilts Prize for outstanding independent research in Electrical Engineering leading to a Ph.D. degree at the California Institute of Technology. He has published more than a hundred of technical papers and holds fifteen U.S. patents. He was a recipient of the National Science Foundation CAREER Award, titled "Multimodal and Multimedia Signal Processing," from 2000 to 2003.

June 30, 09:00 ~ 10:00

From Video Coding to Object Modeling

Peter de With, LogicaCMG/Eindhoven University of Technology, The Netherlands

Chair: Timothy K. Shih, Tamkang University, Taiwan

Abstract

After the successful first generation of compression systems in the form of MPEG-1/2, JPEG and DV coding, the recent MPEG-4/H.264 coding standards offer extra compression by applying more advanced motion models reflecting the motion of objects in reality. Additionally, also a paradigm shift comes to the foreground: instead of processing image arrays, the new processing standards offer the opportunity to segment pictures into so-called video objects. This processing is known as video segmentation and when applied appropriately, the objects correspond with semantically meaningful items from the real scene or image.

The first part of the presentation addresses the efficient coding of backgrounds using sprites as in MPEG-4. By understanding the scene via analysis of the motion and camera position, the background scene is partitioned into multi-sprites. In the algorithm, the perspective distortion can be constrained to control the quality. Moreover, it will be shown that a counter-intuitive multi-sprite partitioning leads to significant savings in the bit rate for background compression.

The second part deals with camera motion and the corresponding analysis. This involves 3-D modeling of the real world in which the camera captured the considered scene. The equations for incorporating the video data into this model are provided. This finally results in a model that incorporates the focal

parameters of the camera and its position related to the scene, without the complications of existing alternative approaches.

The third part discusses object models and how they are used for video object segmentation and preliminary forms of understanding. This includes the use of object graphs and for example texture analysis. One particular case based in facial modeling for face recognition is considered in some more detail. The conclusion of the lecture is that there is a trend towards more understanding of the video or picture signal and we are on the path towards 3-D video. With improved modeling, the understanding of the video will further increase.

Biography

Peter H.N. de With graduated in electrical engineering from the University of Technology in Eindhoven. In 1992, he received his Ph.D. degree from the University of Technology Delft, The Netherlands, for his work on video bit-rate reduction for recording applications. He joined Philips Research Labs Eindhoven in 1984, where he became a member of the Magnetic Recording Systems Department. From 1985 to 1993, he was involved in several European projects on SDTV and HDTV recording. In this period, he contributed as a principal coding expert to the DV standardization for digital camcording. In 1994, he became a member of the TV Systems group at Philips Research Eindhoven, where he was leading the design of advanced programmable video architectures. In 1996, he became senior TV systems architect and in 1997, he was appointed as full professor at the University of Mannheim, Germany, at the faculty Computer Engineering. In Mannheim he was heading the chair on Digital Circuitry and Simulation with the emphasis on video systems. Since 2000, he is with CMG Eindhoven (now LogicaCMG) as a principal consultant and he is professor at the University of Technology Eindhoven, at the faculty of Electrical Engineering. He has written and co-authored numerous papers on video coding, architectures and their realization. Regularly, he is a teacher of the Philips Technical Training Centre and for other post-academic courses. In 1995 and 2000, the co-authored papers that received the IEEE CES Transactions Paper Award, and in 2004, the SPIE Investigators Award. In 1996, he obtained a company Invention Award. In 1997, Philips received the ITVA Award for its contributions to the DV standard. Mr. de With is a senior member of the IEEE, program committee member of the IEEE CES and ICIP, chairman of the Benelux community for Information and Communication Theory, co-editor of the historical book of this community, former scientific board member of CMG, scientific advisor of the Dutch Imaging school ASCII, IEEE ISCE and board member of various working groups.

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Tour Information

We are delighted to welcome you to Taiwan, an island of incredible scenic and cultural attractions. The sightseeing tours listed below offer opportunities to enjoy the value in Taiwan, with convenience at a minimum cost. To register the tours, please contact with the information desk of ICME'04 in the conference days. Each tour has to be teamed up at least 10 people registering for it. The travel agency will provide pick up and delivery back service from and to the conference site.

For further information about Taiwan please visit the web site of Taiwan Tourism Bureau at http://www.tbroc.gov.tw/lan/cht/index/; or Government Information Office at http://www.gio.gov.tw. To better understand Taipei, please use http://www.taipei.gov.tw and select English for browsing.

Taipei City Tour

Morning & Afternoon Tour

Pick-up: AM 08:00 - 09:00(At hotel lobby)
PM 01:00 - 02:00(At hotel lobby)
Duration: 3hrs

Adult's fare: NT$700
Child's fare: NT$600

Tour stops:

Presidential Office (Pass by) -- Chiang Kai-Shek Memorial Hall -- Martyrs' Shrine -- National Palace Museum -- Chinese Temple -- Handicraft Center

- **Chiang Kai-Shek Memorial Hall:** It is an impressive monument to a great Chinese leader. The majestic hall towers over 25 hectares of landscaped gardens, graceful pavilions, and ponds. A statue of late President Chiang looks out over the city from the main building. An elegant Ming-style arch at the main entrance is flanked by two classical-style buildings, the National Theater and the National Concert Hall. The square between the buildings is a popular gathering place during festive occasions.
- **Martyrs' Shrine:** It is an excellent example of classical Ming dynasty architecture, dedicated to the fallen heroes of China's wars. There is an hourly changing of the guard ceremony at the entrance which many people find interesting.
- **National Palace Museum:** Taipei's National Palace Museum houses the world's largest collection of Chinese art treasure. Most of the 620,000 art objects were part of the Chinese imperial collection that was brought to Taiwan for safe-keeping. The collection is too large to be displayed at one time! While many popular pieces remain on permanent display, other items are rotated regularly, making each visit unique.

- ✧ **Chinese Temples:** There are a lot of traditional Chinese temples in Taipei City. Those places represented the centers of people's religious activities. Meticulously designed and built, the faithful believers showed their respects to the Holy Gods, and lots of smoke from incense suffused within those temples.
- ✧ **Handicraft Center:** It is a one-stop shopping place in Taipei for gift, jewelry, art, furniture, and many other inexpensive mementos.

Chiufen Village & Northeast Coast Tour

Afternoon Tour

Pick-up: PM 01:00 - 01:30 (At hotel lobby)

Adult's fare: NT$ 1,000

Child's fare: NT$ 800

Duration: 4hrs

Tour stops:

Chiufen Village -- Chinkuashih Village (Pass by) -- Pitou Cape -- Nanya Rock Formations -- Bay of Two Colors

- ✧ **Chiufen Village:** The villages of Chiufen were once centers of gold mining in Taiwan. The gold is gone, but these quaint old villages, built of closely-packed houses clinging to steep mountainsides, continue to offer enchanting scenery and fascinating glimpses into the lifestyles of the past.
- ✧ **The Northeast Coast National Scenic Area:** The Northeast coast National Scenic Area is located in the northeast corner of Taiwan. The scenic area is noted for its numerous capes and bays backed by green mountains.

Taroko (Marble) Gorge Tour

Whole Day Tour

Pick-up: AM 06:00 - 07:00(At hotel lobby)

(Passport needed for enplaning)

Adult's fare: NT$4,500

Child's fare: NT$3,700

Includes: Round-trip air ticket and lunch

Itinerary:

Pick-up from hotel -- Transfer to Sungshan Domestic Airport -- Arrive at Hualien -- Enbus for Taroko Gorge Gateway -- Eternal-Spring Shrine -- Swallow Caves -- Tunnel of Nine Turns -- Tienhsiang Lodge -- Marble factory -- Chi Hsing Beach -- Hualien Stone Sculptural Park -- Enplane for Taipei -- Transfer to hotel

- ✧ **Taroko (Marble) Gorge Tour:** Taroko Gorge is one of the seven wonders of Asia that no traveler should miss. After a 25-minute flight from Taipei to Hualien, you will be guided along a 12-mile stretch of highway built into awesome marble cliffs high above the rushing river. Your

route will take you through 38 tunnels including the Swallows Grotto, the Tunnel of Nine Turns and the Marble Bridge of Motherly Devotion. After lunch you will visit Chi Hsing Beach and Stone Sculptural Park. Fly back to Taipei around 4:30 PM.

Special Arrangements Available

1.	Return by train	NT$3,700
2.	Overnight stay(One way by train)	NT$5,400
3.	Single room extra	NT$800

East Coast & Taroko National Park Tour

Pick-up: AM 06:00 - 07:00

2 Days & 1 Night Tour

- **(Passport needed for enplaning)**

Adult's fare: NT$7,200

Child's fare: NT$5,800

All inclusive except meals

NT$800 extra for single room

Itinerary:

Day 1: Pick-up from hotel -- Transfer to Sungshan Domestic Airport -- Arrive Hualien -- Enbus for Taroko -- Taroko Gorge Gateway -- Eternal-Spring Shrine -- Swallow Caves -- Tunnel of Nine Turns -- Tienhsiang Lodge -- Marble Factory -- Chi Hsing Beach -- Hualien Stone Sculptural Park -- Hualien (Overnight at Hualien)

Day 2: Pick-up from hotel -- Enbus for East Coast -- Pachi Scenic Lookout -- Stone Steps -- Caves of the Eight Immortals -- Stone Umbrella -- Sanhsientai -- East Rift Valley -- Hualien Airport -- Sungshan Domestic Airport

✧ **East Coast National Park:** is noted for its scenic beauty and miles of nearly deserted black sand or pebble beaches. The route leads south from Hualien to Taitung, offers visitors views of the traditional lifestyles of Taiwan's farmers and fisherman, as well as glimpses of the island's aborigine tribes. Points of interest along the scenic area include the lovely curve of the black-sand beach at Chichi Bay; marvelous coastal views from the Caves of the Eight Immortal, which are an important archaeological site perched on the steep mountainside; the lighthouse and interesting seashells on the Island of the Three Immortals (Sanhsientai).

Final Program

June 27	June 28	June 29	June 30
08:30 ~ 12:00 ***Morning Tutorials*** **T1** (R106, 1st Fl.) **George Tzanetakis** **T2** (R107, 1st Fl.) **Pascale Lorenz** **T3** (R110, 1st Fl.) **Anthony Vetro and John R. Smith**	**08:30 ~ 10:00** ***Opening & Keynote 1*** **Ya-Qin Zhang** (Auditorium, 10th Fl.)	**09:00 ~ 10:00** ***Keynote 2*** **Bernd Girod** (Auditorium, 10th Fl.)	**09:00 ~ 10:00** ***Keynote 3*** **Peter de With** (Auditorium, 10th Fl.)
	10:20 ~ 12:00 ***Technical Presentation*** TP1-0 TP1-1 TP1-2 TP1-3 TP1-4 TP1-5 TP1-6 **10:30 ~ 12:00** ***Poster & Demo*** PD1	**10:20 ~ 12:00** ***Technical Presentation*** TP4-0 TP4-1 TP4-2 TP4-3 TP4-4 TP4-5 TP4-6 **10:30 ~ 12:00** ***Poster & Demo*** PD4	**10:20 ~ 12:00** ***Technical Presentation*** TP7-0 TP7-1 TP7-2 TP7-3 TP7-4 TP7-5
Lunch	***Lunch***	***Lunch***	***Lunch***
13:30 ~ 17:00 ***Afternoon Tutorials*** **T4** (R106, 1st Fl.) **Ling Guan** **T5** (R107, 1st Fl.) **Eric Debes and Wayne Wolf** **T6** (R110, 1st Fl.) **G. Rigoll**	**13:20 ~ 15:00** ***Technical Presentation*** TP2-1 TP2-2 TP2-3 TP2-4 TP2-5 TP2-6 **13:00 ~ 14:30** ***Poster & Demo*** PD2	**13:20 ~ 15:00** ***Technical Presentation*** TP5-1 TP5-2 TP5-3 TP5-4 TP5-5 TP5-6 **13:00 ~ 14:30** ***Poster & Demo*** PD5	**13:20 ~ 15:00** ***Technical Presentation*** TP8-1 TP8-2 TP8-3 TP8-4 TP8-5 TP8-6
	15:20 ~ 17:00 ***Technical Presentation*** TP3-1 TP3-2 TP3-3 TP3-4 TP3-5 TP3-6 **15:00 ~ 16:30** ***Poster & Demo*** PD3	**15:20 ~ 17:00** ***Technical Presentation*** TP6-1 TP6-2 TP6-3 TP6-4 TP6-5 TP6-6 **15:00 ~ 16:30** ***Poster & Demo*** PD6	**15:20 ~ 17:00** ***Technical Presentation*** TP9-1 TP9-2 TP9-3 TP9-4 TP9-5
	18:30 ~ 20:30 ***Reception*** (Sky Lounge, 12th Fl.)	**18:30 ~ 21:00** ***Banquet & Keynote*** **Tsuhan Chen** (Intl. Reception Hall,1st Fl.)	**18:00** ***Closing***

PD*: International Reception Hall, 1st Fl.

TP*-0: Auditorium, 10th Fl.

TP*-1: R110, 1st Fl. **TP*-2**: R107, 1st Fl. **TP*-3**: R106, 1st Fl.

TP*-4: R101, 1st Fl. **TP*-5**: R103, 1st Fl. **TP*-6**: R104, 1st Fl.

Internet Room: R108, 1st Fl.

Exhibition: International Reception Hall, 1st Fl.

Technical Presentation, Poster, and Demo

June 28, 2004

Technical Presentation – June 28, 2004, 10:20 ~ 12:00

TP1-0 June 28, 2004, 10:20 ~ 12:00 (Auditorium, 10th Fl.)

Image Processing / Classification (I)

Chair: Yap-Peng Tan, Nanyang Technological University, Singapore

Progressive Geometry Encoder using Octree-Based Space Partitioning

Jingliang Peng and C.-C. Jay Kuo, *USC*

Parameterized Discriminant Analysis for Image Classification

Qi Tian, Jie Yu, Ting Rui, Thomas S. Huang, *University of Texas at San Antonio*

Reliable JPEG 2000 Wireless Imaging by Means of Error-Correcting MQ Coder

M. Grangetto, E. Magli, G. Olmo, *Politecnico di Torino*

A New Snake Algorithm for Object Segmentation in Stereo Images

Shin-Hyoung Kim, Jae-Ho Choi, Hyun-Bin Kim, Jong-Whan Jang, *PaiChai University*

Blur Detection for Digital Images Using Wavelet Transform

Hanghang Tong,Mingjing Li, Hongjiang Zhang,Changshui Zhang, *Microsoft Research Asia*

Multi-Layer Inpainting on Chinese Artwork

Timothy K. Shih., Rong-Chi Chang, Liang-Chen Lu and Huan-Chi Huang, *Tamkang University*

TP1-1 June 28, 2004, 10:20 ~ 12:00 (R110, 1st Fl.)

Multimedia Coding / Processing (I)

Chair: Oscar C. Au, The Hong Kong University of Science and Technology, Hong Kong

Arbitrarily-Shaped Video Coging: Smart Padding Versus MPEG-4 LPE/Zero Padding

Andy C. Yu, Guobin Shen, Bing Zeng, and Oscar C. Au , *The University of Warwick*

A Robust and Efficient Video Stabilization Algorithm

Hung-Chang Chang, Shang-Hong Lai, and Kuang-Rong Lu, *National Tsing Hua University, Hsinchu, Taiwan*

Content Based Editing of Semantic Video Metadata

Chitra L. Madhwacharyula, Mohan S. Kankanhalli, Philippe Mulhem, *National University of Singapore*

Design of Robust Reversible Variable-Length Codes Using the Property Free Distance

Wook-Hyun Jeong, Young-Suk Yoon, and Yo-Sung Ho, *Kwangju Institute of Science and Technology (K-JIST)*

Indoor Shadow Detection for Video Segmentation

Dong Xu, Jianzhuang Liu, and Xiaoou Tang, *Chinese University of Hong Kong*

Emulating Short MPEG GOPS with Less I-Frames

Ruiduo Yang and Michael S. Brown, H*ong Kong University of Science and Technology*

TP1-2 June 28, 2004, 10:20 ~ 12:00 (R107, 1st Fl.)

Face, Gesture and Body Analysis (I)

Chair: Chung-Hsien Wu, National Cheng Kung University, Taiwan

Temporal Modeling of Facial Actions from Face Profile Image Sequences

M. Pantic, I. Patras, *Delft University of Technology*

Emotion Recognition Using Acoustic Features and Textual Content

Ze-Jing Chuang, Chung-Hsien Wu, *National Cheng Kung University, Taiwan*

A Peer-to-Peer Architecture for Distributed Real-Time Gesture Recognition

Chang Hong Lin, Tiehan Lv, Wayne Wolf, I.Burak Ozer, *Princeton University*

A Gabor Direct Fractional-Step LDA Algorithm for Face Recognition

Guang Dai, Yuntao Qian, *Zhejiang University, China*

Biometric Identification Using Driving Behavioral Signals

Kei Igarashi, Chiyomi Miyajima, Katsunobu Itou, Kazuya Takeda., Fumitada Itakura., and H¨useyin Abut, *Nagoya University*

TP1-3 June 28, 2004, 10:20 ~ 12:00 (R106, 1st Fl.)

SS1: Active Learning for MM Information Retreival

Chair: Edward Chang, UCSB, USA

Multi-Class Active Learning for Video Semantic Feature Extraction

Rong Yan and Alex Hauptmann, *Carnegie Mellon University*

Active Learning and Its Scalability for Image Retrieval

Edward Y. Chang and Wei-Cheng Lai, *University of California*

Active Learning for Simultaneous Annotation of Multiple Binary Semantic Concepts

Milind R. Naphade and John R. Smith, *IBM, USA*

Semantic Propagation from Relevance Feedbacks

Hoon Yul Bang, Cha Zhang and Tsuhan Chen, *Carnegie Mellon University*

Entropy-Based Active Learning with Support Vector Machines For Content-Based Image Retrieval

Feng Jing, Mingjing Li, Hongjiang Zhang, Bo Zhang, *Microsoft Research Asia, China*

TP1-4 June 28, 2004, 10:20 ~ 12:00 (R101, 1st Fl.)

SS2: Advanced Video Coding Techniques for HDTV and Video Applications (I)

Chair : Wen Gao, Chinese Academy of Sciences, China

Context-Based 2D-VLC for Video Coding

Qiang Wang, Debin Zhao, Wen Gao, Qingming Huang,Yan Lu, Siwei Ma, *Harbin Institute of Technology, China*

Sub-Pixel Motion Compensation Interpolation Filter in AVS

Ronggang Wang, Chao Huang, Jintao Li,Yanfei Shen, *Chinese Academy of Sciences, China*

Spatial Prediction Based Intra-Coding

Zhang Nan, Yin Baocai, Kong Dehui &Yue Wenying, *Beijing University of Technology, China*

New BI-Prediction Techniques for B Pictures Coding

Xiangyang Ji, Debin Zhao, Wen Gao, Qingmin Huang, Siwei Ma, Yan Lu, *Chinese Academy of Sciences, China*

An Iterative Method for Hypothetical Reference Decoder

Z. G. Li, Nam Ling, Susanto Rahardja, Xiao Lin, Ping Li, *Santa Clara University*

TP1-5 June 28, 2004, 10:20 ~ 12:00 (R103, 1st Fl.)

Multimedia Semantics

Chair: M. R. Naphade, IBM Thomas J. Watson Research Center

Multi-granular Detection of Regional Semantic Concepts

Milind R. Naphade, Apostol Natsev, C. Y. Lin, John R. Smith, *IBM Thomas J. Watson Research Center*

Organizing WWW Images Based on the Analysis of Page Layout and Web Link Structure

Deng Cai, Xiaofei He, Wei-Ying Ma, Ji-Rong Wen, Hongjiang Zhang, *Microsoft Research Asia*

Sematnic Video Clustering Across Sources Using Bipartite Spectral Clustering

Dong-Qing Zhang, Ching-Yung Lin,Shi-Fu Chang and John R. Smith, *Columbia University*

Color Matching Techniques for Video Mosaic Applications

Ming-Sui Lee, Meiyin Shen and C. -C. Jay Kuo, *University of Southern California*

MPEG-4 Compliant Reproduction of Face Animation Created in Maya

Charalampos Laftsidis, Constantine Kotropoulos, Ioannis Pitas, *Aristotle University of Thessaloniki*

TP1-6 June 28, 2004, 10:20 ~ 12:00 (R104, 1st Fl.)

3D Graphics Processing/Retrieval

Chair: Masahiro Okuda, The University of Kitakyushu, Japan

A New Surface Model Based on a Fibre Bundle of 1-Parameter Groups

Jinhui Chao, Jongdae Kim, Nagakura Atsushi, *Chuo University, Tokyo, Japan*

Regular 3D Mesh Reconstruction Based on Cylindrical Mapping

Ishtiaq Rasool Khan, Masahiro Okuda, and Shin-ichi Takahashi, *University of Kitakyushu*

PLX FP: An Efficient Floating-Point Instruction Set for 3D Graphics

Xiao Yang, Ruby B.Lee, *Princeton University*

Scale-Space 3D TexMesh SimplificAtion

Irene Cheng and Pierre Boulanger, *University of Alberta*

Similarity Detection of 3D Meshes Using 2D Hierarchical Regular Grids

Masahiro Okuda, Kyoko Nagatomo, Masaaki Ikehara, Shin-ichi Takahashi, *The University of Kitakyushu*

Poster & Demo – June 28, 2004, 10:30 ~ 12:00

PD1 June 28, 2004, 10:30 ~ 12:00 (International Reception Hall, 1st Fl., 6 sessions)

QoS, Rate Control, and Broadcasts (I)

Design and Implementation of H.264-Based Video Decoder for Digital Multimedia Broadcasting

Victor H.S. Ha, Sung-Kyu Choi, Jong-Gu Jeon, Woo-Sung Shim and Won-Kap Jang, *Samsung Electronics*

Rate Control for MPEG-4 FGS Coded Video Using Piecewise Rate Distortion Model

Li zhuo, Kin-Man Lam, Lansun Shen, *Beijing University of Technolog, China*

Bandwidth-Aware Video Encoding with Adaptive Image Scaling

Arun Abraham,Ju Wang, Jonathan C.L.Liu, *Virginia Commonwealth University*

A Distortion Control Scheme for Allocating Constant Distortion in FD-CD Video Transcoder

Jin-soo Kim, Jae-Gon Kim, Kyeong-Ok Kang and JinWoong Kim, Hanbat *National University*

A Rate Control Algorithm for H.264/AVC Video Coding Standard Based on Rate-Quantization Model

Seonki Kim, Yo-Sung Ho, Kwangju *Institute of Science and Technology*

Design and Analysis of Variable Bit Rate Caching Strategies for Continuous Media Data

Ligang Dong and Bharadwaj Veeravalli, Hangzhou University of Commerce

A Two-stream Approach for Adaptive Rate Control in Multimedia Applications

Longin Jan Latecki, Tao Jin and Jaiwant Mulik, *Temple Universit*y

Changing Frame Rate, Changing Satisfaction?

S.R. Gulliver and G. Ghinea, *Brunel University*

QoS, Rate Control, and Broadcasts (II)

Hierarchical Reference Picture Selection Method for Temporal Scalability beyond H.264

Hideaki Kimata, Masaki Kitahara, Kazuto Kamikura, Yoshiyuki Yashima, *NTT Corporation*

Development of a Remultiplexer for Digital Multimedia Broadcasting

Sammo Cho, Byungjun Bae, Kim Geon, Jinhwan Lee, Youngkwon Hahm, Hyuckjae Lee, Electronics and Telecommunications Research Institute, *KOREA*

Energy-Aware QoS Adaptation for Streaming Video Based on MPEG-7

Morihiko Tamai, Tao Sun, Keiichi Yasumoto, Naoki Shibata and Minoru Ito, *Nara Institute of Science and Technology, Japan*

Design of Protection and Distribution Service Model for Digital Broadcasting Content

HyeJoo Lee, Bum Suk Choi, Jong Won Seok and Jin Woo Hong, *Electronics and Telecommunications Research Institute, KOREA*

Schemes for User-Interest Controlled Video Bandwidth Adaptation in a Collaborative Workspace Environment

Stefan Elf , Jeremiah Scholl, Peter Parnes, *Luleå University of Technology, Sweden*

QoS-Based Hybrid Concurrency Control on Distributed Multimedia Objects

Tomoya Enokido, and Makoto Takizawa, *Tokyo Denki University*

An Eye Opener: Low Frame Rates do not Affect Fixations

S.R. Gulliver and G. Ghinea, *Brunel University*

A Scheduling Scheme to Enable Fast-Forward for Continuous Media Data Broadcasting

Tomoki Yoshihisa, Masahiko Tsukamoto, Shojiro Nishio, *Osaka University*

Lossless VBR Video Broadcasting Considering User Bandwidth Limit

Shufang Wu, Tiko Kameda, *Simon Fraser University*

QoS, Rate Control, and Broadcasts (III)

Simple Mathematical Modeling of Efficient Path Selection for QoS Routing in Load Balancing

Man-Ching Yuen, Weijia Jia, Chi-Chung Cheung , *City University of Hong Kong*

PID-based Real-Time Rate Control

Chi-Wah Wong, Oscar C. Au, Hong-Kwai Lam, *Hong Kong University*

A User-Centered Approach to Enhance QoS for Networked Video

Y. Bai , M.R.Ito, *University of British Columbia*

Atomicity and Causality of Multimedia Messages in Group Communication

Satoshi Itaya, Tomoya Enokido, and Makoto Takizawa, *Tokyo Denki University*

TDD-CDMA Uplink Capacity Investigation in the Background Noise Floor

Mugen Peng, Wenbo Wang, Beijing *University of Posts and Telecommunications, China*

Dynamic Class Selecting Mechanism for Guaranteed Service with Minimum Cost over Relative Differentiated-Services Networks

Hwangjun Song and Dai Boong Lee, *Hongik University*

A FFT/IFFT Soft IP Generator for OFDM Communication System

Tsung-Han Tsai , Chen-Chi Peng, *National Central University, Taiwan*

A Novel Rate-Based Hop By Hop Congestion Control Algorithm

Shu-Ching Chen, Mei-Ling Shyu, Chengjun Zhan, Srinivas Peeta, *Florida International University*

WiSE Video: Using In-Band Wireless Loss Notification to Improve Rate-Controlled Video Streaming

Athina Markopoulou, Eric Setton, Mark Kalman, John Apostolopoulos, *Stanford University*

Multimedia Retrieval (I)

Why One Example is not Enough for an Image Query

Thomas E. Bjoerge and Edward Y. Chang, *UC Santa Barbara*

Shape Recognition Based on the Medial Axis Approach

Nualsawat Hiransakolwong Khanh Vu Kien A. Hua Sheau-Dong Lang, *University of Central Florida, USA*

PatternQuest: Learning Patterns of Interest Using Relevance Feedback in Multimedia Information Retrieval

Yimin Wu and Aidong Zhang, *State University of New York at Buffalo*

A Decision Tree-Based Multimodal Data Mining Framework for Soccer Goal Detection

Shu-Ching Chen, Mei-Ling Shyu, Min Chen, Chengcui Zhang, *Florida International University, USA*

SVM-based Relevance Feedback Using Random Subspace Method

Dacheng Tao, and Xiaoou Tang, *Chinese University of Hong Kong*

An Approach to Content-Based Video Retrieval

Anthony J.T. Lee, Ruey-Wen Hong and Meng-Fang Chang, *National Taiwan University, Taiwan*

Automatic Extraction of PC Scenes Based on Feature Mining for a Real Time Delivery System of Baseball Highlight Scenes

M.Kumano, Y.Ariki, K.Tsukada,S.Hamaguchi and H.Kiyose, *Ryukoku University, Japan*

On Automatic Actions Retrieval of Martial Arts

Timothy K. Shih, Ching-Sheng Wang, Yuan-Kai Chiu, Yi-Tsou Hsin, and Chun-Hong Huang, T*amkang University, Taiwan*

Multimedia Retrieval (II)

iARM – An Interactive Video Retrieval System

Paisarn Muneesawang and Ling Guan, *Ryerson University*

Fast Integer Motion Estimation for H.264 Video Coding Standard

Andy Chang, Peter H. W. Wong, Y.M. Yeung, Oscar C. Au, *HKUST, Hong Kong*

Linear Time for Discovering Non-Trivial Repeating Patterns in Music Databases

Yu-lung Lo and Wen-lin Li, *Chaoyang University of Technology, Taiwan*

Accessing Video Archives Using Interactive Search

M. Worring, G.P. Nguyen, L. Hollink, J.C. van Gemert, D.C. Koelma, *Mediamill/University of Amsterdam*

Capturing Life-Log and Retrieval Based on Contexts

Tetsuro Hori, Kiyoharu Aizawa, *University of Tokyo*

Music Database Query with Video by Synesthesia Observation

Ruiduo Yang and M. S. Brown, *Hong Kong University of Science and Technology*

Query Relaxation and Answer Integration for Cross-Media Meta-Searches

Akihiro Kuwabara, Kazutoshi Sumiya, Katsumi Tanaka, *Kyoto University, Japan*

Project Demonstrations

Multi-Conference over HF Packet Radio Channels

Antonio Navarro, Rui Rodrigues, Joao Angeja, Joao Tavares, Luis Carvalho and Fernando Perdigao, *Telecommunications Institute- Aveiro University*

HUMOR: a HUman MOtion Retrieval System with Multi-Modal Queries

Ming-Yang Wu, Chih-Yi Chiu, Shih-Pin Chao, Yao-Cyuan Wu, Shi-Nine Yang, *National Tsing Hua University*

Multimedia TV News Browsing System

YY Xu, YH Chen, CL Tseng, PS Lai and Hsin-Chia Fu, *National Chiao Tung University*

PD1

A Visual MPEG-4 Scene Editor

Yi-Chin Huang, Meng-Jyi Shieh, Chien-Feng Huang, Ching-Che Kao, Shu-Min Yang, Wen-Chin Chen, *National Taiwan University*

Low-Cost Wireless Projector Interface Device using TI TMS320DM270

Arvind Raman, Mini Jain, T. C. Rajendra, S. Satheesh, Sriram Sethuraman, Vikal Kumar Jain, Vinayak Prasanna Das, *Ittiam Systems* (Pvt.) Ltd.

MPEG-2 to H.264 Transcoder on TI TMS320DM642

Arvind Raman, Kismat Singh, Manisha Agrawal Mohan, Neelakanth Shigihalli, Sriram Sethuraman, B. S. Supreeth, *Ittiam Systems* (Pvt.) Ltd.

Courseware Development Using Influence Diagram with SCORM Compatibility

Flora Chia-I Chang, Wen-Chih Chang, Hsuan-Che Yang, Timothy K. Shih, and Huan-Chao Keh, *Tamkang University*

Adaptive Pocket SCORM Reader

Timothy K. Shih, Nigel H. Lin, Hsuan-Pu Chang, and Kuan-Hao Huang, *Tamkang University*

Technical Presentation – June 28, 2004, 13:20 ~ 15:00

TP2-1 June 28, 2004, 13:20 ~ 15:00 (R110, 1st Fl.)

Video Coding & Image Processing (I)

Chair: Jeng-Shyang Pan, National Kaohsiung University of Applied Sciences, Taiwan

Noises Removal for Images by Wavelet-Based Bayesian Estimator via Levy Process Analysis

X. Huang, A.C. Madoc, and M. Wagner, *University of Canberra*

A Real-Time Background Subtraction Method with Camera Motion Compensation

Tiehan Lv, Burak Ozer, Wayne Wolf, *Princeton University*

Vector Representation of Binary Images Containing Halftone Dots

Kei KAWAMURA, Hiroshi WATANABE, Hideyoshi TOMINAGA, *Waseda University*

Adaptive Binarization Method for Document Image Analysis

Meng-Ling Feng and Yap-Peng Tan, *Nanyang Technological University*

Video-Object Segmentation Using Multi-Sprite Background Subtraction

Dirk Farin, Peter H. N. de With, Wolfgang Effelsberg, *University Mannheim*

TP2-2 June 28, 2004, 13:20 ~ 15:00 (R107, 1st Fl.)

Image Processing / Classification (II)

Chair: Frank Y. Shih, New Jersey Institute of Technology, USA

Solar Flare Tracking Using Image Processing Techniques

Ming Qu, Frank Y. Shih, Ju Jing, Haimin Wang, *New Jersey Institute of Technology*

Multi-View EM Algorithm and Its Application to Color Image Segmentation

Xing Yi, Changshui Zhang, Jingdong Wang, *Tsinghua University, China*

Chain-Based Extraction of Line Segments to Describe Images

Abdolah Chalechale, Golshah Naghdy, Prashan Premaratne, Hasan Moghaddasi, *University of Wollongong, Australia*

Content-Based Image Post-Processing For Blurring Artifact Reduction

Rajas A. Sambhare , Yu Hen Hu, *University of Wisconsin – Madison*

Combined Use of Spatial and Spectral Correlations for Enhanced Color Filter Array Demosaicking

Lanlan Chang and Yap-Peng Tan, *Nanyang Technological University, Singapore*

Restoring Halftoned Color-Quantized Images with Simulated Annealing

Yik-Hing Fung and Yuk-Hee Chan, *The Hong Kong Polytechnic University*

TP2-3 June 28, 2004, 13:20 ~ 15:00 (R106, 1st Fl.)

Multimedia Coding / Processing (II)

Chair: Yo-Sung Ho, Kwangju Institute of Science and Technology, South Korea

A High-Speed Codebook Design Algorithm for ECVQ Using Angular Constraint with Search Space Partitioning

Ahmed Swilem, Kousuke Imamura, Hideo Hashimoto, *Kanazawa University, Japan*

Robust VLC Sequence Decoding Exploiting Additional Video Stream Properties with Reduced Complexity

Hang NGUYEN, Pierre DUHAMEL, Jerome BROUET, Denis ROUFFET, *ALCATEL CIT, R&I*

Complexity Adaptive Quantization for Intra-frames in Very Low Bit Rate Video Coding

F. Pan, Z. G. Li, K. P. Lim, X. Lin, S. Rahardja, D. J. Wu & Wu Si, *A *STAR, Singapore*

An Efficient Bit Allocation Algorithm in Dependent Coding Framework and One-way Video Applications

Seong Hwan Jang and Nikil Jayant, *Georgia Tech*

Single-Pass Frame-Level Constant Distortion Bit Allocation for Smooth Video Quality

Junqiang Lan, Xinhua Zhuang, Wenjun Zeng, *University of Missouri-Columbia*

TP2-4 June 28, 2004, 13:20 ~ 15:00 (R101, 1st Fl.)

Face, Gesture and Body Analysis (II)

Chair: M. Pantic, Delft University of Techn, The Netherlands

Case-Based Reasoning for User-Profiled Recognition of Emotions from Face Images

M. Pantic, L. Rothkrantz, *Delft University of Techn*

Reanimating Real Humans: Automatic Reconstruction of Animated Faces from Range Data

Yu Zhang, Terence Sim, and Chew Lim Tan, *National University of Singapore*

On the Importance of Skin Color for "Other-Race" Effect

Jingrong Jia, Lijun Yin and Joseph Morrissey, *State University of New York at Binghamton*

Adult Content Web Filtering and Face Detection Using Data-Mining Based Skin-Color Model

Mohamed Hammami, Dzmitry Tsishkou, Liming Chen, *Ecole Centrale de Lyon, France*

Functional Evaluation of a Vision-Based Object Remembrance Support System

Takahiro Ueoka, Tatsuyuki Kawamura, Yasuyuki Kono and Masatsugu Kidode, *Nara Institute of Science and Technology*

TP2-5 June 28, 2004, 13:20 ~ 15:00 (R103, 1st Fl.)

SS3: Advanced Video Coding Techniques for HDTV and Video Applications (II)

Chairs : Tihao Chang, NCTU, Taiwan

Huifang Sun, Mitsubishi Electric Research Lab., USA

Selective Temporal Error Concealment Algorithm for H.264/AVC

Bongsoo Jung, Byeungwoo Jeon , Myung-Don Kim, Bongsue Suh, and Song-In Choi, *Sungkyunkwan University, Korea*

Video Coding Techniques for Digital Cinema

Jianfen Zeng, *Sun Yat-sen University*

Multiple Modes Intra-Prediction in Intra Coding

Peng Zhang, Wen Gao, Siwei Ma, Lu Yan, and Debin Zhao, *Chinese Academy of Science, China*

Overview of AVS Video Standard

Liang Fan, Siwei Ma and Feng Wu, *Sun Yat-sen University*

Adaptive Weighted Prediction in Video Coding

Yanfei Shen, Dongming Zhang, Chao Huang, and Jintao Li, *Chinese Academy of Sciences, China*

TP2-6 June 28, 2004, 13:20 ~ 15:00 (R104, 1st Fl.)

SS4: Emerging Multimedia Security Technologies for Digital Rights Management

Chairs: Heather Yu, Panasonic Research, USA

Chun-Shien Lu, Academia Sinica, Taiwan

A System for Digital Rights Management Using Key Predistribution

M. Ramkumar and N. Memon, *Mississippi State University, USA*

Semantic Multimedia Authentication with Model Vector Signature

C.-Y. Lin and B. L. Tseng, *IBM*

On Content Protection for Mobile Consumer Multimedia Applications

Hong Heather Yu, *Panasonic*

An Efficient Key Scheme for Layered Access Control of MPEG-4 FGS Video

B. Zhu, M. Feng and S. Li, *Microsoft Research Asia, China*

The Architecture of MPEG-4 Based IPMP Authoring System

K. Kim, J. Hong, C. Park, and H. Jung, *ETRI, KOREA*

Poster & Demo – June 28, 2004, 13:00 ~ 14:30

PD2 June 28, 2004, 13:00 ~ 14:30 (International Reception Hall, 1st Fl., 6 sessions)

Multimedia Streaming and Architectures (I)

Router Active Queue Management for Both Multimedia and Best-Effort Traffic Flows

Mei-Ling Shyu, Shu-Ching Chen, Chamara Ranasingha, *University of Miami*

MediaBeads: An Architecture for Path-Enhanced Media Applications

Michael Harville, Ramin Samadani,Dan Tretter, Debargha Mukherjee, Ullas Gargi, Nelson Chang *Hewlett-Packard Laboratories*

Video Staging in Video Streaming Proxy Server

W.K.Cheuk and D.P.K.Lun, *Hong Kong Polytechnic University*

Support Fast Scan Operations with Video Streaming Technology

Chun-Ming Huang, Kai-Chao Yang, and Jia-Shung Wang, *National Tsing Hua University, Taiwan*

A High-Performance MPEG-4 Bitstream Processing Core

Tai-Lun Chang, Ying-Ming Tsai, Chih-Da Chien, Chien-Chang Lin, and Jiun-In Guo, *National Chung Cheng University, Taiwan*

Reducing Memory Bank Conflict for Embedded Multimedia Systems

Qi Zhang, Qing Li, Yunyang Dai and C.-C. Jay Kuo, *University of Southern California*

Deterministic Traffic Regulation with Decoder Buffer Constraints for Streaming Videos

Chu-Chuan Lee, Pao-Chi Chang, *National Central University, Taiwan*

Optimal Multicast Overlay Placement for Realtime Streaming Media

Min-You Wu, Yan Zhu, and Wei Shu, *University of New Mexico*

Reconfigurable Coprocessor for Media Streaming

Sebastien Bilavarn, Eric Debes, *Intel Corporation*

Multimedia Streaming and Architectures (II)

Design and Performance Evaluation of TCP-Friendly Thin-Layered Video Multicast Scheme

Kitae Nahm and C.-C. Jay Kuo, *University of Southern California*

Performance Evaluation of a Destination-Based Video Distribution Strategy for Reservation-Based Multimedia Systems

Xiaorong Li and Bharadwaj Veeravalli, *National University of Singapore*

Network-Level Loss Control Schemes for Streaming Video

Y. Bai and M.R.Ito, *University of British Columbia*

A VOD System on High-Availability and Load Balancing Linux Servers

Chao-Tung Yang and Ko-Tzu Wang, *Tunghai University, Taiwan*

A Performance Comparison of Multiple Description Video Streaming in Peer-to-Peer and Content Delivery Networks

Shoaib Khan, Ruediger Schollmeier, Eckehard Steinbach, *Technische Universität München*

Two Dimensional Timeline and its Application to Conversant Media System

Xin Yan, Kong Wah Wan, Qi Tian, Mun Kew Leong and Ping Xiao, *A *START, Singapore*

A Web Based History Tool for Multicast e-Meeting Sessions

Roland Parviainen and Peter Parnes, *Lulea University of Technology, Sweden*

Motion Estimation (I)

Fast Motion Vector Re-Estimation for Arbitrary Video Downsizing Using Spatial-Variant Filter

Hong-Kwai LAM, Oscar C. AU and Chi-Wah WONG, *Hong Kong University of Science and Technology*

A Statistical Approach for Object Motion Estimation with MPEG Motion Vectors

Xiaodong Yu, Ping Xue and Qi Tian, *Nanyang Technological University, Singapore*

Optical Flow Back-Projection for Genuine Motion Vector Estimation

Chieh-Ling Huang, E-Liang Chen, Pau-Choo Chung, Yuh-Ren Choo, *National Cheng Kung University, Taiwan*

A 4-way Pipelined Processing Architecture for Three Step Search Block-matching Motion Estimation

Chi-Geun Lee, Ho-Geun Lee, Hyun-Jin Shim, Sung-Tae Jung and Sang-Seol Lee, *Wonkwang University, South Korea*

An Unsymmetrical-Cross Multi–Resolution Motion Search Algorithm for MPEG4-AVC/H.264 Coding

Peng Yang, Yu-Wen He, Shi-Qiang Yang, *Tsinghua University, PR. China*

Optimized DCT Domain Motion Vector Estimation in Frame Skipped Transcoding

ShouWen Lai, Li Fen, *Tsinghua University, PR China*

Improving the Speed of Covergence of a Maximum-Likelihood Motion Estimation Algorithm of a Human Face

Geovanni Martinez, *Universidad de Costa Rica*

Fast Priority Search Algorithm for Block Motion Estimation

Yongfang Liang, Ishfaq Ahmad, Viswanathan Swaminathan, *University of Texas at Arlington*

A Fast and Effective Method for Motion Estimation

Yi-Kai Chen and Te-Chien Chen, *Ulead System, Inc. Taiwan*

A Layer Extraction System Based on Dominant Motion Estimation and Global Registration

Eun-Young Kang, Isaac Cohen and Gérard Medioni, *University of Southern California*

Video segmentation, Summarization, and Structuring (I)

An Automatic Segmentation Algorithm for Moving Objects in Video Sequences under Multi-Constraints

Wu Si, Zhang Yong-dong, Lin Shou-xun, *Chinese Academy of Sciences, PR. China*

Region of Interest Editing of MPEG-2 Video Streams in the Compressed Domain

Jacob Augustine, Shivarama Rao K., Norman P. Jouppi, and Subu Iyer, *Hewlett-Packard*

Active Video Object Extraction

Ye Lu and Ze-Nian Li, *Simon Fraser University*

Reliable Real Time Scene Change Detection in MPEG Compressed Video

Edmundo Saez, Jose I. Benavides, Nicolas Guil, *University of Cordoba, Spain*

Key Frame Extraction Using Inter-Shot Information

Jiawei Rong, Wanjun Jin, Lide Wu, *Fudan UniversityP.R.China*

Key Frame Selection by Macroblock Type and Motion Vector Analysis

Wing-San Chau, Oscar C. Au, Tak-Song Chong, *Hong Kong University of Science and Technology*

Classification of Self-Consumable Highlights for Soccer Video Summaries

Dian W. Tjondronegoro, Yi-Ping Phoebe Chen, Binh Pham, *Deakin University*

Video Shooting Navigation System by Real-Time Useful Shot Discrimination Based on Video Grammar

K.Uehara, M.Amano, Y.Ariki, M.Kumano, *Kobe University*

Video Segmentation, Summarization, and Structuring (II)

Formalising Stories: Sequences of Events and State Changes

Andrew Vassiliou, Andrew Salway, David Pitt, *University of Surrey*

Robust Soccer Highlight Generation with a Novel Dominant-Speech Feature Extractor

Kongwah WAN, Changsheng XU, *A *START, Singapore*

Detection of the Highlights in Baseball Video Program

Huang-Chia Shih and Chung-Lin Huang, *National Tsing Hua University, Taiwan*

Sports Highlight Detection from Keyword Sequences Using HMM

Jinjun Wang, Changsheng Xu, Engsiong Chng, Qi Tian, *A *START, Singapore*

Automatic Detection of Flash Movie Genre Using Bayesian Approach

Dawei Ding, Jun Yang, Qing Li, Liping Wang, Liu Wenyin, *City University of Hong Kong*

Active Learning for Story Segmentation of Spoken Documents

Shun-Chuan Chen, *National Taiwan University, Taiwan*

Time Series Analysis and Segmentation Using Eigenvectors for Mining Semantic Audio Label Sequences

Regunathan Radhakrishnan, Ziyou Xiong, Ajay Divakaran, Takashi Kan, *Mitsubishi Electric Research Labs*

An Improved Music Representation Method by Using Harmonic-Based Chord Decision Algorithm

Chuan-Wang Chang and Hewijin Christine Jiau, *National Cheng Kung University, Taiwan*

Automatic Text Detection Using Multi-Layer Color Quantization in Complex Color Images

Soo-Chang Pei, and Yu-Ting Chuang, *National Taiwan University, Taiwan*

Layered, Scalable & Multiple Description Transmission

An End-to-End Video Transmission Framework with Efficient Bandwidth Utilization

Hongli Luo, Mei-Ling Shyu, Shu-Ching Chen, *University of Miami*

Robust Multi-Level Video Representation Using Mean Shift Analysis

Hai Gao, Xiaodong Yu, Lei Wang, Ping Xue, and Qi Tian, *Nanyang Technological Universit , Singapore*

Scalable Transmission of Avatar Video Streams in Virtual Environments

Peter Quax, Tom Jehaes, Chris Flerackers, Wim Lamotte, *Universitaire Campus, BELGIUM*

Constrained Texture Synthesis by Scalable Sub-patch Algorithm

Jhing-Fa Wang, Han-Jen Hsu, Hong-Ming Wang, *National Cheng Kung University, Taiwan*

An Audio Recommendation System Based on Audio Signature Description Scheme in MPEG-7 Audio

Yao-Chang Huang and Shyh-Kang Jeng, *National Taiwan University, Taiwan*

Providing Scalable On-Demand Video Services for Heterogeneous Receivers

Ying Cai, Zhan Chen,Tavanapong Wallapak,Johnny Wong, *Iowa State University, Ames*

Multimedia Contents Management and Transmission System "VAST-web"and its Effective Transport Protocol "SVFTP"

Shigeyuki Sakazawa, Yasuhiro Takishima, Yasuyuki Nakajima, Masahiro Wada, and Kazuo Hashimoto, *KDDI R&D Laboratories Inc.*

Progressive Sound Rendering in Multimedia Applications

Qiong ZHANG Jiaoying SHI, Zhejiang *University, China*

Constant-Quality Rate Allocation for Spectral Fine Granular Scalable (SFGS) Video Coding by Using Dynamic Programming Approach

Wen-Nung Lie, Cheng-Hsiung Tseng, and Tom C.-I. Lin, *National Chung Cheng University, Taiwan*

Technical Presentation – June 28, 2004, 15:20 ~ 17:00

TP3-1 June 28, 2004, 15:20 ~ 17:00 (R110, 1st Fl.)

Video Coding & Image Processing (II)

Chair: Phen-Lan Lin, Providence University, Taiwan

A Motion and Edge Adaptive Deinterlacing Algorithm

S. C. Tai, C. S. Yu, and F. J. Chang, *National Cheng Kung University, Taiwan*

Fast Inter-Prediction Mode Decision and Motion Search for H.264

Chih-Hung Kuo, Meiyin Shen and C.-C. Jay Kuo, *University of Southern California*

Adaptive Rate-Distortion Optimization Using Perceptual Hints

Chun-Jen Tsai, Chih-Wei Tang, Ching-Ho Chen, and Ya-Hui Yu, *National Chiao Tung University, Taiwan*

Hadamard Transform Based Equal-Average Equal-Variance Equal-norm Nearest Neighbor Codeword Search Algorithm

Shu-Chuan Chu, John F. Roddick, Zhe-Ming Lu and Jeng-Shyang Pan, *National Kaohsiung University of Applied Sciences, Taiwan*

TP3-2 June 28, 2004, 15:20 ~ 17:00 (R107, 1st Fl.)

Multimedia Coding / Processing (III)

Chair: Rahardja Susanto, I2R, Singapore

Fast Macroblock Partition Prediction for H.264/AVC

Tien-Ying Kuo and Chen-Hung Chan, *National Taipei University of Technology, Taiwan*

Memory Efficient Image Coding with Embedded Zero Block-Tree Coder

Harish Arora, Pramit Singh, Ekram Khan and Farid Ghani, *Aligarh Muslim University*

A Novel Deblocking Algorithm Using Edge Flow-Directed Filter and Curvelet Transform

ZhiMing Zhang, JeongHoon Park, YongJe Kim, *Samsung Electronics*

Length-Constrained MAP Decoding Revisited

Zhe Wang, Xiaolin Wu and Sorina Dumitrescu, *McMaster University*

Adaptive Nonlinear Diffusion Processes for Ringing Artifacts Removal on JPEG 2000 Images

S.S. Yao, W.S. Lin, Z.K. Lu, E.P. Ong and X.K. Yang, *A*STAR, Singapore*

TP3-3 June 28, 2004, 15:20 ~ 17:00 (R106, 1st Fl.)

Motion Estimation

Chair: Ming-Ting Sun, University of Washington, USA

Fast multiple reference FRAME motion estimation For h.264

Yeping Su, Ming-Ting Sun, *University of Washington*

Fast Motion Estimation Using Hierarchical Motion Intensity Structure

Yongfang Liang, Ishfaq Ahmad, Jiancong Luo, Yu Sun, *University of Texas at Arlington*

A Non-Iterative Motion Vector Based Global Motion Estimation Algorithm

Yeping Su, Ming-Ting Sun, *University of Washington*

Search Speed and Power Driven Integrated Software and Hardware Optimizations for Motion Estimation Algorithms

S. Yang and W. Wolf and V. Narayanan, *CE Group, ELE Department*

TP3-4 June 28, 2004, 15:20 ~ 17:00 (R101, 1st Fl.)

Multimedia Architecture and Video Surveillance

Chair: Yuan-Fang Wang, University of California, Santa Barbara, USA

An Extensible Digital Television Middleware Architecture Based on Hardware Abstraction Layer

ZHANG Hong-Guang, ZHENG Shi-Bao, *Shanghai Jiao Tong University, China*

Design and Implementation of an Efficient MPEG-4 Interactive Terminal on Embedded Devices

Yi-Chin Huang, Tu-Chun Yin, Kou-Shin Yang, Yan-Jun Chang, Meng-Jyi Shieh, Wen-Chin Chen, *National Taiwan University, Taiwan*

Human Activity Detection and Recognition for Video Surveillance

W. Niu, D. Han, J. Long, and Y. F. Wang, *University of California*

SSD Tracking Using Dynamic Template and Log-polar Transformation

Qiang Zhu, Kwang-Ting Cheng, Hongjiang Zhang, *University of California*

TP3-5 June 28, 2004, 15:20 ~ 17:00 (R103, 1st Fl.)

SS5: Media Identification

Chairs: Job Oostveen, Philips, The Netherlands

Qibin Sun, I2R, Singapore

Video Material Archive System for eEficient Video Editing Based On Media Identification

E. Kasutani, R. Oami, A. Yamada, T. Satoadn K. Hirata, *NEC, Japan*

Robust Mesh-Based Hashing for Copy Detection and Tracing of Images

C.-S. Lu, C.-Y. Hsu, S.-W. Sun and P.-C. Chang, *Academia Sinica, Taiwan*

Scalability Issues in an HMM-Based Audio Fingerprinting

Eloi Batlle, Jaume Masip, Enric Guaus, Pedro Cano, *Universitat Pompeu Fabra, Spain*

Audio Content Identification by Using Perceptual Hashing

R. Lancini, F. Mapelli and R. Pezzano, *CEFRIEL, Italy*

Hierarchical, Non-uniform Locality Sensitive Hashing and Its Application to Video Identification

Z. Yang, W.-T. Ooi, Q. Sun; Hierarchical, *A *START, Singapore*

TP3-6 June 28, 2004, 15:20 ~ 17:00 (R104, 1st Fl.)

SS6: Novel Techniques for Browsing Large Multimedia Collections

Chairs: Alejandro Jaimes, Fuji Xerox, Japan

Hari Sundaram, Arizona State University, USA

Free Viewpoint Browsing of Live Soccer Games

Yoshinari KAMEDA, Takayoshi KOYAMA, Yasuhiro MUKAIGAWA, Fumito YOSHIKAWA and Yuichi OHTA, *University of Tsukuba, Japan*

Cluster-Temporal Browsing of Large News Video Databases

Mika Rautiainen, Timo Ojala, Tapio Seppänen, *University of Oulu*

Multimodal Music Retrieval for Large Databases

Björn Schuller, Gerhard Rigoll, and Manfred Lang, *Technische Universitaet Muenchen*

Optimizing Similarity Based Visualization in Content Based Image Retrieval

Giang P. Nguyen and Marcel Worring, *University of Amsterdam, Netherlands*

SenseWeb: A Multi-User Environment for Browsing Images from the Internet

R. Lopez-Gulliver, N. Hagita, M.Suzuki, T. Satoh, H. Tochigi, *ATR, Japan*

Poster & Demo – June 28, 2004, 15:00 ~ 16:30

PD3 June 28, 2004, 15:00 ~ 16:30 (International Reception Hall, 1st Fl., 6 sessions)

Content-based Retrieval (I)

Fuzzy Semantic Labeling for Image Retrieval

Margarita C. S. Paterno, Fun Siong Lim, Wee Kheng Leow, *National University of Singapore*

3D Content-Based Retrieval with Spin Images

Jurgen Assfalg, Alberto Del Bimbo, Pietro Pala, *Universita' degli Studi di Firenze*

Multiple Object Retrieval for Image Databases Using Multiple Instance Learning and Relevance Feedback

Chengcui Zhang, Shu-Ching Chen, Mei-Ling Shyu, *Florida International University*

Shape-Based Image Retrieval with Relevance Feedback

Limin Ma, Qiang Zhou, David Chelberg, and Mehmet Celenk, *Ohio University*

Content Based Image Retrieval Using Category-Based Indexing

Aster Wardhani and Tod Thomson, *Queensland University Of Technology, Australia*

Imagery-Based Digital Collection Retrieval Using Eigen SGLD Matrices

Ying Dai,and Dawei Cai,Iwate pref. University

Shape Representation by Spatial Partitioning for Content Based Retrieval Applications

Stefano Berretti, Alberto Del Bimbo, *University of Firenze, ITALY*

Multimedia Indexing and Representation

Sprite Pyramid for Videos and Images Having Finite-Depth Scenes

Ramazan Savas Aygun, Aidong Zhang, *University of Alabama in Huntsville, USA*

Adding Functionality to Multimedia Content in an MPEG-21 Scenario

Frederik De Keukelaere, Saar De Zutter, Rik Van de Walle, *Ghent University*

Fast Prototyping and Refinement of Complex Dynamic Data Types in Multimedia Applications for Consumer Embedded Devices

David Atienza, Marc Leeman, Francky Catthoor, Geert Deconinck, Jose M. Mendias, Vincenzo De Florio, Rudy Lauwereins, Complutense *University of Madrid*

Mosaic Based View Enlargement for Moving Objects in Moving Pictures

Hui Shen, Mohan S Kankanhalli, S H Srinivasan, Wei-Qi Yan, *National University of Singapore*

Linking Geographic Hypermedia Uing the Remotely Sensed Data

Sung-Soo Kim, Jong-Hyun Park, *Electronics and Telecommunications Research Institute, Korea*

An Efficient Bitmap Indexing Method for Similarity Search in High Dimensional Multimedia Databases

Jinguk Jeong, Jongho Nang, Sogang, *University, Korea*

Image Indexing and Similarity Retrieval Based on Key Objects

C.H. Lee and P.W. Huang, *Chaoyang University of Technology, Taiwan*

IndexTV: A MPEG-7 Based Personalized Recommendation System for Digital TV

Marc Rovira, Jordi González, Alejandro López, Jordi Mas, Albert Puig, Jordi Fabregat and Gabriel Fernàndez, *Ramon Llull University, Spain*

Semantic Analysis of Song Lyrics

Beth Logan, Andrew Kositsky and Pedor Moreno, *Hewlett Packard Labs, USA*

Color-Mood Analysis of Films Based on Syntactic and Psychological Models

Cheng-Yu Wei, Nevenka Dimitrova, Shih-Fu Chang, *Columbia University*

Virtual Reality and 3D Graphics

IMCE: Integrated Media Creation Environment

Brett Adams, Svetha Venkatesh, Ramesh Jain, *Curtin University of Technology, Australia*

Computer Vision Based Analysis of the Botanical Tree's Dynamical Behaviors for the Reproduction in Virtual Space

Liang-Chen Lu, *Tamkang University, Taiwan*, Jun Ohya, *Waseda Univeristy, Japan*

Simulating Vivid 3D Solid Textures from 2D Growable Patterns

Yisong Chen and Horace H S Ip, *City University of Hong Kong*

MY Virtual Graffiti System

Mei Yii Lim, Ruth Aylett, *University of Salford*

An Extensible Scripting Language for Interactive Animation in a Speech-Enabled Virtual Environment

Tsai-Yen Li, Mao-Yung Liao, and Chun-Feng Liao, *National Chengchi University, Taiwan*

Feature Refinement Strategy for Extended Marching Cubes: Handling on Dynamic Nature of Real-Time Sculpting Application

Chien-Chang Ho, Yan-Hong Lu, Hung-Te Lin, Shuen-Huei Gua, Sheng-Yao Cho, Rung-Huei Liang, Bing-Yu Chen, Ming Ouhyoung, *National Taiwan University, Taiwan*

Apply Cluster and Grid Computing on Parallel 3D Rendering

Chao-Tung Yang and Chuan-Lin Lai, *Tunghai University , Taiwan*

Novel Hierarchical Approach for Radiosity

Chin-Chen Chang and Zen-Chung Shih, *Chung Hua University, Taiwan*

Anatomically-Based 3D Face and Oral Cavity Model for Creating Virtual Medical Patients

G. Moschos, N. Nikolaidis, I. Pitas, *Aristotle University of Thessaloniki, Greece*

Multimedia Security and Content Protection (I)

Copyright Protection of Architectural CAD Drawing Using the Multi ple Watermarking Scheme

Ki-Ryong Kwon, Bong-Ju Jang, Eung-Joo Lee, and Young Huh, *Pusan University*

A Novel Fragile Watermarking Technique

Frank Y. Shih and Yi-Ta Wu, *New Jersey Institute of Technology*

Efficient Implementation of Elliptic Curve Cryptography (ECC) on VLIW-Micro-Architecture Media Processor

Yu Hu, Qing Li and C.-C. Jay Kuo, *University of Southern California*

Steganalysis of Boundary-Based Steganography Using Autoregressive Model of Digital Boundaries

M. Jiang, X. Wu, E. K. Wong, and N. Memon, *Polytechnic University*

Document Image Analysis and Verification Using Cursive Signature

Abdolah Chalechale, Golshah Naghdy, Prashan Premaratne, Alfred Mertins, *University of Wollongong, Wollongong, Australia*

An MPEG Tolerant Authentication System for Video Data

Takeyuki Uehara, Reihaneh Safavi-Naini, Philip Ogunbona, *University of Wollongon*

Embedding Information within Dynamic Visual Patterns

Wen-Hung Liao and Chi-Chih Chang, *National Cheng Chi University, Taiwan*

Image Indexing Based on Fractal Feature

Ming Hong Pi, Chun-Hung Li and Lihua Li, *Hong Kong Baptist University*

A Novel Block-Based Authentication Technique for Binary Images by Block Pixel Rearrangements

Pei-Ming Huang, Da-Chun Wu, and Wen-Hsiang Tsai, *National Chiao Tung University, Taiwan*

Multimedia Security and Content Protection (II)

Data Hiding Domain Classification for Blind Image Steganalysis

Guo-Shiang Lin, Chia H. Yeh, and C.-C. Jay Kuo, *National Chung Cheng University, Taiwan*

Efficient Integration of Watermarking With MPEG Compression

Ju Wang, Adrian R. Steele, Jonathan C.L. Liu, *Virginia Commonwealth Univesity*

A Unified Authentication Framework for JPEG2000

Zhishou Zhang, Gang Qiu, Qibin Sun, Xiao Lin, Zhicheng Ni, Yun Q. Shi, *Institute for Infocomm Research, Singapore*

Design of Hierarchical Keys for a Multi-user-based Watermarking System

Feng-Hsing Wang, Lakhmi C. Jain, Jeng-Shyang Pan, *Uni. of South Australia, Australia*

Secure Watermark Verification Scheme

Liu Yongliang, Wen Gao, *Harbin Institute of Technology, China*

Protection Scheme for Secure MPEG-2 Streaming

Jeong-Hyun Kim, Yeon-Jeong Jeong, Ki-Song Yoon, *ETRI, Korea*

Efficient Oracle Attacks on Yeung-Mintzer and Variant Authentication Schemes

Jinhai Wu, Bin B. Zhu, Shipeng Li, and Fuzong Lin, *Microsoft Research Asia*

A Fingerprint-Based User Authentication Scheme for Multimedia Systems

Chu-Hsing Lin and Yi-Yi Lai, *Tunghai University, Taiwan*

A New Watermarking Method Based on Chaotic Maps

Jiashu Zhang, Lei Tian, and Heng-Ming Tai, *University of Tulsa*

PD3

Multimedia Security and Context Protection (III)

A Sensor-Based Multimedia Authentication System

Zheng Liu, Xue Li, Zhaoyang Dong, *University of Queensland, Australia*

RSA Scheme with MRF And ECC For Data Encryption

Chaur-Chin Chen, *National Tsing Hua University, Taiwan*

Data Hiding of Binary Images Using Pair-Wise Logical Computation Mechanism

Chang-Lung Tsai; Kuo-Chin Fan; Char-Dir Chung, Thomas Chiang Chuang, *National Central University, Taiwan*

Text Document Authentication by Integrating Inter Character and Word Spaces Watermarking

Huijuan Yang and Alex C. Kot, Nanyang *Technological University, Singapore*

Robust Data-Hiding in Audio

Hafiz Malik, Ashfaq Khokhar, Rashid Ansari, *University of Illinois at Chicago*

Hierarchical Watermarking Scheme for Image Authentication and Recovery

Phen-Lan Lin, Chung-Kai Hsieh, Po-Whei Huang, *Providence University, Taiwan*

Adaptive Positioning of a Visible Watermark in a Digital Image

Alessandra Lumini, Dario Maio, *University of Bologna, Italy*

An AV Object Oriented Encryption Algorithm for MPEG-4 Streams

Pang-Chieh Wang, Ting-Wei Hou, *National Cheng Kung University, Taiwan*

Joint Visual Cryptography and Watermarking

Ming Sun Fu, Oscar C. Au, *Hong Kong Univ. of Science and Technology*

June 29, 2004

Technical Presentation – June 29, 2004, 10:20 ~ 12:00

TP4-0 June 29, 2004, 10:20 ~ 12:00 (Auditorium, 10th Fl.)

Smart Multimedia Acquisition Systems

Chair: Marc Davis, University of California, Berkeley, USA

Automatic White Balancing Using Adjacent Channels Adjustment in RGB Domain

Hong-Kwai LAM, Oscar C. AU and Chi-Wah WONG, *Hong Kong University of Science and Technology*

Gain Self-Calibration Procedure for Microphone Arrays

Ivan Tashev, *Microsoft Research*

A Portable Solution for Automatic Lecture Room Camera Management

Michael N. Wallick, Yong Rui, and Liwei He, *University of Wisconsin-Madison*

Active Capture and Folk Computing

Ana Ramirez, Marc Davis, *University of California, Berkeley*

TP4-1 June 29, 2004, 10:20 ~ 12:00 (R110, 1st Fl.)

Multimedia Learning

Chair: Michael L. Best, MIT Media, Lab., USA

Learning Semantic Concepts from User Feedback Log for Image Retrieval

Junwei Han, King N. Ngan, Mingjing Li, Hongjiang Zhang, *Nanyang Technological University*

DDS: An Efficient Dynamic Dimension Selection Algorithm for Nearest Neighbor Search in High Dimensions

Chia-Chen Kuo and Ming-Syan Chen, *National Taiwan University, Taiwan*

Ontology-Based Multi-Classification Learning for Video Concept Detection

Yi Wu, Belle L. Tseng and John R. Smith, *UC Santa Barbara*

Evaluation of Low-Level Features by Decisive Feature Patterns

Wei Wang and Aidong Zhang, *State University of New York at Buffalo*

A Contextual-Based Hopfield Neural Network for Medical Image Edge Detection

Chuan-Yu Chang, *National Yunlin University of Science & Technology, Taiwan*

TP4-2 June 29, 2004, 10:20 ~ 12:00 (R107, 1st Fl.)

Multimedia Retrieval (I)

Chair: C. Y. Lin, IBM T. J. Watson Center, USA

Discovering Aspect-Based Correlation of Web Contents for Cross-Media Information Retrieval

Koji Zettsu, Yutaka Kidawara, Katsumi Tanaka, *Communications Research Laboratory*

A New Analysis of the Value of Unlabeled Data in Semi-Supervised Learning for Image Retrieval

Qi Tian, Jie Yu, Qing Xue, Nicu Sebe, *University of Texas at San Antonio*

Representation and Retrieval of Paintings Based on Art History Concepts

Marchenko Yelizaveta, Tat-Seng Chua, Aristarkhova Irina,Ramesh Jain, *National University of Singapore, Singapore*

Efficient Motion-Vector-Based Video Search Using Query by CLIP

Chuan-Yu Cho, Ya-Ting Chuang, Pei-Chi Chu, Shih-Yu Huang, and Jia-Shung Wang, *National Tsing Hua University, Taiwan*

i-Ring: A System for Humming Transcription and Chord Generation

Hong-Ru Lee and J.-S. Roger Jang, *National Tsing Hua University, Taiwan*

TP4-3 June 29, 2004, 10:20 ~ 12:00 (R106, 1st Fl.)

Multimedia Streaming Architectures

Chair: Imre Varga, Siemens

Data Partitioning Techniques for Pervasive Multimedia Platforms

Xiaoping Hu, Umit Y. Ogras, Nicholas H. Zamora, Radu Marculescu, *Carnegie Mellon University*

Network-Aware Rate Adaptation for Video Streaming

Aravindan Raghuveer, Ewa Kusmierek, David. H.C. Du, *University of Minnesota*

Peer-To-Peer Video Delivery Scheme for Large Scale Video-On-Demand Applications

Chen-Lung Chan, Shih-Yu Huang, Mato Jan, and Jia-Shung Wang, *National Tsing Hua University, Taiwan*

A Hierarchical Overlay Multicast Network

Yingyin Jiang, Min-You Wu, and Wei Shu, *University of New Mexico*

TP4-4 June 29, 2004, 10:20 ~ 12:00 (R101, 1st Fl.)

Qos, Broadcasts and Networked Video

Chair: Wei Tsang Ooi, National University of Singapore

Predictive Control of Video Quality under Fluctuating Bandwidth Conditions

Dmitri Jarnikov, Peter van der Stok, Clemens C. Wüst, *Eindhoven University of Technology*

Frame Layer Bit Allocation Scheme for Constant Quality Video

Minqiang Jiang, Xiaoquan Yi, Nam Ling, *Santa Clara University*

Optimizing Periodic Broadcast Resource Requirements with Proxy

Ewa Kusmierek and David H.C. Du, *University of Minnesota*

On video Multicast over Wireless LANs

Sumathi Gopal, Kumar Ramaswamy, Charles Wang, *Rutgers University*

Layered coding with Good Allocation Outperforms Multiple Description Coding over Multiple Paths

Vu Thanh Nguyen, Ee Chien Chang, Wei Tsang Ooi, *National University of Singapore*

TP4-5 June 29, 2004, 10:20 ~ 12:00 (R103, 1st Fl.)

Multimedia Compression

Chair: Yuk-Hee Chan, The Hong Kong Polytechnic University, Hong Kong

Data Compression of Light Field Using Wavelet Packet

Xu Dong, Dai Qionghan, Xu Wenli, *Tsinghua University, China*

Very Low Bitrate Video Compression Based on GFA Modeling

Paul Bao and Xiaohu Ma, *Nanyang Technological University, Singapore*

Attention Model Based Progressive Image Transmission

Yusuo Hu, Xing Xie, Zonghai Chen, Wei-Ying Ma, *Microsoft Research Asia*

A Technique for Lossy Compression of Error-Diffused Halftones

Sin-Ming Cheung and Yuk-Hee Chan, *The Hong Kong Polytechnic University*

Mutual Multi-Image Compression Baesd on Fractal Mating Coding

Hsuan T. Chang and Chung C. Lin, *National Yunling University of Science and Technology*

TP4-6 June 29, 2004, 10:20 ~ 12:00 (R104, 1st Fl.)

SS7: Multi-Modality-Based Media Semantic Analysis

Chairs : Joo-Hwee Lim, I2R, Singapore

Jesse S. Jin, Univ. of Sydney, Australia

Generative, Discriminative, and Ensemble Learning on Multi-Modal Perceptual Fusion Toward News Video Story Segmentation

Winston H.-M. Hsu and Shih-Fu Chang, *Columbia University*

A Hierarchical Approach to Story Segmentation of Large Broadcast News VIDEO CORPUS

Lekha Chaisorn, Tat-Seng Chua, Chin-Hui Lee, and Qi Tian, *National University of Singapore*

Video Skimming Based on Story Units via General Tempo Analysis

Shih-Hung Lee, Chia H. Yeh, and C. -C. Jay Kuo, *University of Southern California*

Detection of TV News Monologues by Style Analysis

Cees G.M. Snoek, Marcel Worring, and Alexander G. Hauptmann, *University of Amsterdam, The Netherlands*

Scene Retrieval with Sign Sequence Matching Based on Video and Audio Features

Noboru Babaguchi, Tetsuya Ishida, and Keisuke Morisawa, *Osaka University, Japan*

Poster & Demo – June 29, 2004, 10:30 ~ 12:00

PD4 June 29, 2004, 10:30 ~ 12:00 (International Reception Hall, 1st Fl., 6 sessions)

Video Coding and Noise Removal (I)

An Efficient Inter Mode Decision Approach for H.264 Video Coding

Xuan Jing and Lap-Pui Chau, *Nanyang Technological University*

A Fast BMA Based on Combining Search Candidate Subsampling and APDS

Wenbin Jiang , Manli Zhou, *HUST, China*

An Improved Fast Encoding Method for Vector Quantization Based on Memory-Efficient Data Sructure

Zhibin Pan, Koji Kotani, and Tadahiro Ohmi, *Tohoku University, Japan*

Fast Inter Prediction Mode Decision for H.264

Dongdong Zhu, Qionghai Dai, and Rong Ding, *Tsinghua University, China*

Variable Frame Skipping Scheme Based on Estimated Quality of Non-Coded Frames at Decoder for Real-Time Block-Based Video Coding

Tien-Ying Kuo, Yang Liang, and Chin-Cheng Chu, *National Taipei University of Technology, Taiwan*

Fast Mode Decision for H.264

Jeyun Lee and Byeungwoo Jeon, *Sungkyunkwan University, KOREA*

Coding Artifacts Reduction Using Edge Map Guided Adaptive and Fuzzy Filtering

Hao-Song Kong, Yao Nie, Anthony Vetro, Huifang Sun, Kenneth E. Barner, *Mitsubishi Electric Research Labs, USA*

A Novel Hardware Accelerator Architecture for MPEG-2/4 AAC Encoder

Yan-Chen Lu, Chun-Fu Shen and Chi-Kuang Chen, *Vivotek Inc., Taiwan*

Video Coding and Noise Removal (II)

Multiple Description Motion Compensation Video Coding for MPEG-4 FGS over Lossy Packet Networks

Chih-Ming Chen, Yung-Chang Chen, and Chien-Min Chen, *National Tsing Hua University, Taiwan*

A Directional Field Based Fast Intra Mode Decision Algorithm for H.264 Vido Coding

F. Pan, X. Lin, S. Rahardja, K. P. Lim, Z. G. Li, *A *START*

Fast 4×4 Intra-Prediction Mode Selection for H.264

Zhang Yong-dong, Dai Feng, Lin Shou-xun, *Chinese Academy of Sciences, China*

Lossless Image Coding Using a Switching Predictor with Run-Length Encodings

Lih-Jen Kau and Yuan-Pei Lin, *National Chiao Tung Univ., Taiwan*

New Methods for Improvement of Sinusoidal Transform Vocoders

Fabio A. R. Nascimento, Francisco J. Fraga, *INATEL, Brazil*

An Improved Practical Efficient Implementation of ICT Used in H.264

Xueming LI, Fang WEI, *Beijing University of Posts and Telecommunications, China*

Face, Scene, Human, and Song Recognition (I)

Real-Time Eye Detection Using Face Circle Fitting and Dark-Pixel Filtering

Daw-Tung Lin and Chen-Ming Yang, *Chung-Hua University, Taiwan*

Learning Object Trajectory Patterns by Spectral Clustering

Fatih Porikli, *Mitsubishi Electric Research Laboratories*

Robust Face Recognition Using Minimax Probability Machine

Chu-Hong Hoi and Michael R. Lyu, *The Chinese University of Hong Kong*

Integrating Color and Motion to Enhance Human Detection within Aquatic Environment

Junxian Wang, How-Lung Eng, Alvin H. Kam and Wei-Yun Yau, *A *START, Singapore*

Pose Determination of Human Head Using One Feature Point Based On Head Movement

Ben Yip, Wing Y. Siu and Jesse S. Jin, *The University of Sydney*

Gesture Recognition Approach for Sign Language Using Curvature Scale Space and Hidden Markov Model

Chin-Chen Chang and Chung-Mou Pengwu, *Chung Hua University, Taiwan*

Towards Robust Face Recognition from Multiple Views

Ming-yu Chen & Alexander Hauptmann, *Carnegie Mellon University*

Automatic Red-Eye Detection and Removal

Xiao-Ping Miao, Terence Sim, *National University of Singapore*

Localization of Human Eyes Based on a Series of Binary Images

Jiatao Song, Jilin Liu, Zheru Chi, Wei Wang, Zhejiang *University, P. R. China*

Face, Scene, Human and Audio Recognition (II)

Evaluation of 3D Face Analysis and Synthesis Techniques

Mark Chan, Chia-Yen Chen, Gareth Barton, Patrice Delmas, Georgy Gimel'farb, Philippe Leclercq, Thomas Fischer, *University of Auckland*

Online Face Recognition System through the Internet

Hwangjun Song, Sun Jae Chung, Kyoungwon Min and Hyeok-Koo Jung, *Hongik University, Korea*

Polyphonic Instrument Identification Using Independent Subspace Analysis

Pamornpol Jincahitra, *Stanford University*

Emotion Recognition in the Manual Interaction with Graphical User Interfaces

Björn Schuller, Gerhard Rigoll, and Manfred Lang, *Technische Universität München*

Recognition of Six Basic Facial Expressions by Feature-Points Tracking using RBF Neural Network and Fuzzy Inference System

Hadi Seyedarabi, Ali Aghagolzadeh, Sohrab Khanmohammadi, *Tabriz University, Iran*

Blocking Objectionable Images: Adult images and Harmful Symbols

Huicheng Zheng, Hongmei Liu, Mohamed Daoudi, *MIIRE Group, LIFL/INT ENIC-Telecom Lille1*

Local Earth Mover's Distance and Face Warping

S H Srinivasan, *Satyam Computer Services Ltd*

Multimedia Editing and Authoring

Interactive Broadcasting Contents Authoring and Searching System

Yesun Joung, Kyuheon Kim, Jinwong Kim, *Electronics and Telecommunications Research Institute, Korea*

Reuse of SMIL2.0 Scripts in Dividable Dynamic Timeline-Based Authoring

Chun-Chuan Yang, Yung-Chi Wang, and Chen-Kuei Chu, *National Chi Nan University, Taiwan*

Web-Based Platform for Multimedia Programming

Alexander Vazhenin, Ying-Hong Wang, and Dmitry A. Vazhenin, *Tamkang University, Taiwan*

Dividable Dynamic Timeline-Based Authoring for SMIL2.0 Presentations

Chun-Chuan Yang, Chen-Kuei Chu, and Yung-Chi Wang, *National Chi Nan University, Taiwan*

A Petri Nets-Based Approach to Modeling SCORM Sequence

H. W. Lin, Timothy K. Shih, Wen-Chih Chang, Chao-Hsun Yang and Chun-Chia Wang, *Tamkang University, Taiwan*

mProducer: Authoring Multimedia Personal Experiences on Mobile Phones

Chao-Ming Teng, Hao-hua Chu, Chon-In Wu, *National Taiwan University, Taiwan*

Computer Vision Based Text and Equation Editor for LaTeX

Ozcan Oksuz, Ugur Gudukbay and Enis Cetin, *Bilkent University*

MPEG-4 Content Editing System for Real-Time IP Environment

Yasuyuki Miura and Michiaki Katsumoto, *Communications Research Laboratory (CRL), Japan*

Sensitivity Analysis of a Cascade RLS-LMS Algorithm for Different Resolution Audio Signals

D.-Y. Huang, X. Lin and R. Yu, *Institute for Infocomm Research, Singapore*

Image Classification and Detection

Comparison and Combination of Two Novel Commercial Detection Methods

Pinar Duygulu, Ming-yu Chen, Alex Hauptmann, *Carnegie Mellon University*

Boosting Image Classification Scheme

Xipeng Qiu, Zhe Feng, Lide Wu, *Fudan University, P. R. China*

Improved Partial Distance Search for K Nearest-Neighbor Classification

Yu-Long Qiao, Jeng-Shyang Pan, Sheng-He Sun, *Harbin Institute of Technology, P.R. China*

Detecting Region-of-Interest (ROI) in Digital Mammogram by Using Morphological Bandpass Filter

JuCheng Yang, DongSun Park, *Chonbuk National University, Korea*

Analysis of Traditional Chinese Seals and Synthesis of Personalized Seals

Howard Leung, *City University of Hong Kong*

Kernel Full-Space Biased Discriminant Analysis

Dacheng Tao and Xiaoou Tang, *Chinese University of Hong Kong*

Rotation Invariant Texture Classification Based on a Directional Filter Bank

Rong Duan, Hong Man and Ling Chen, *Stevens Institute of Technology*

Technical Presentation – June 29, 2004, 13:20 ~ 15:00

TP5-1 June 29, 2004, 13:20 ~ 15:00 (R110, 1st Fl.)

Multimedia Retrieval (II)

Chair: Chitra Dorai, IBM

A Directory Service for Multi-literate Users

Mark Sin, Marco Escobedo, Michael Best, *Georgia Tech*

Multimedia Indexing and Retrieval with Features Association Rules Mining

Anicet Kouomou-Choupo, Laure Berti-Equille, Annie Morin, *University of Rennes I*

Using Entropy Impurity for Improved 3D Object Similarity Search

Benjamin Bustos, Daniel A. Keim, Dietmar Saupe, Tobias Schreck, Dejan V. Vranic, *University of Konstanz*

An Unsupervised Learning Approach to Musical Event Detection

Sheng GAO, Chin-Hui LEE, and Yong-Wei ZHU, *A *STAR, Singapore*

Detecting Discussion Scenes in Instructional Videos

Ying Li, Chitra Dorai, *IBM T.J. Watson Research Center*

TP5-2 June 29, 2004, 13:20 ~ 15:00 (R107, 1st Fl.)

Video Streaming (I)

Chair: Pascal Frossard, EPFL – Switzerland

A Content-Based Bit Allocation Model for Video Streaming

Wei Lai, Xiao-Dong Gu, Hong-Jiang Zhang, Ren-Hua Wang, *Microsoft Research Asia*

Optimal FEC Rate for Media Streaming in Active Networks

Dan Jurca and Pascal Frossard, *EPFL – Switzerland*

Real-Time Streaming of Prestored Multiple Description Video with Restart

Eric Setton, Atsushi Shionozaki, Bernd Girod, *Stanford University*

Rate-Distortion Optimized Dynamic Bitstream Switching for Scalable Video Streaming

Bo Xie and Wenjun Zeng, *Univ. of Missouri-Columbia*

Proxy Assistant for Streaming Media Delivery

Zhonghang Xia and I-Ling Yen, *University of Texasat Dallas*

TP5-3 June 29, 2004, 13:20 ~ 15:00 (R106, 1st Fl.)

Speech and Audio Processing/Recognition (I)

Chair: Hsin-Min Wang, Academia Sinica, Taiwan

Speech Recognition Enhancement by Psychoacoustic Modeled Noise Suppression

Yiu-Pong Lai, Man-Chun Hui, Chi-Wah Kok and Man-Hung Siu, *Hong Kong University of Science and Technology*

Characterizing Music Dnamics for Improvisation

S H Srinivasan, *Satyam Computer Services Ltd*

Kalman Filtering Speech Enhancement Incorporating Masking Properties for Mobile Communication in a Car Environment

Chang Huai YOU, Soo Ngee KOH, Susanto RAHARDJA, *Institute for Infocomm Research, Singapore*

Singing Voice Detection Using Twice-Iterated Composite Fourier Transform

Namunu C. Maddage, Kong-Wah Wan, Changsheng Xu, Ye Wang, *Institute for Infocomm Research, Singapore*

Mixture of Experts for Audio Classification: An Application to Male Female Classification and Musical Genre Recognition

Hadi Harb, Liming Chen, Jean-Yves Auloge, *Ecole Centrale de Lyon*

TP5-4 June 29, 2004, 13:20 ~ 15:00 (R101, 1st Fl.)

Error Concealment for Media Transmission (I)

Chair: Jin-Jang Leou, National Chung Cheng University, Taiwan

A Hybrid Error Concealment Scheme for MPEG-2 Video Transmission Based on Best Neighborhood Matching Algorithm

Li-Wei Kang and Jin-Jang Leou, *National Chung Cheng University, Taiwan*

A Rate Control Scheme for H.264 Video Transmission

Thung-Hiung Tsai and Jin-Jang Leou, *National Chung Cheng University, Taiwan*

Temporal Error Concealment for Video Transmission

Tak-Song Chong, Oscar C. Au, Wing-San Chau, Tai-Wai Chan, *Hong Kong University*

Proxy-Based Error Tracking for H.264 Based Real-time Video Transmission in Mobile Environments

Wei Tu and Eckehard Steinbach, *Technische Universitaet Muenchen Institute of Communication Networks*

A Burst-Error Concealment Algorithm with Selective Spatial Interpolation for Visual Communications over Noisy Channels

Bo YAN and Kam Wing NG, *Chinese University of Hong Kong*

TP5-5 June 29, 2004, 13:20 ~ 15:00 (R103, 1st Fl.)

Multimedia Distribution

Chair: Long-Wen Chang, National Tsing-Hua University, Taiwan

Efficient Mobile Content Delivery by Exploiting User Interest Correlation

Tao Wu, Sadhna Ahuja, Sudhir Dixit, *Nokia*

Robust Multipath Source Routing Protocol (RMRSR) for Video Communication over Wireless Ad Hoc Networks

Wei Wei and Avideh Zakhor, *University of California at Berkeley*

R-D Hint Tracks for Low-Complexity R-D Optimized Video Streaming

Jacob Chakareski, John Apostolopoulos, Susie Wee, Wai-tian Tan and Bernd Girod , *HP*

TP5-6 June 29, 2004, 13:20 ~ 15:00 (R104, 1st Fl.)

SS8: Recent Advaces in Visual Detection and Tracking

Chairs : Ming-Hsuan Yang, Honda Research, USA

Shang-Hong Lai, NTHU, Taiwan

Toward Building a Robust and Intelligent Video Surveillance System: A Case Study

Edward Y. Chang, Yuang-Fang Wang, and I-Jeng Wang, *University of California*

Sports Scene Analysis and Visualization from Multiple-View Video

Hideo Saito, Naho Inamoto, and Schiko Iwase, *Keio University, Japan*

Common Visual Cues for Sports Highlights Detection

M. Bertini, A. Del Bimbo W. Nunziati, *Università di Firenze, Italy*

Detection and Tracking in the IBM PeopleVision System

J. Connell, A. W. Senior, A. Hampapur, Y.-L. Tian, L. Brown, and S. Pankanti, *IBM*

Poster & Demo – June 29, 2004, 13:00 ~ 14:30

PD5 June 29, 2004, 13:00 ~ 14:30 (International Reception Hall, 1st Fl., 6 sessions)

Multimedia Processing, Compression and Modeling (I)

Perception Based Alpha Estimation in Natural Image Matting

Shengyou Lin and Jiaoying Shi, *Zhejiang University, PR. China*

Modeling the Spatial-Chromatic Distribution of Images

Dong-Woei Lin and Shih-Hsuan Yang, *National Taipei University of Technology, Taiwan*

The Extraction of Characters on Dated Color Postcards

Shwu-Huey Yen, Mei-Fen Chen, Hwei-Jen Lin, Chia-Jen Wang, and Chiu-Hsiang Liu, *Tamkang University, Taiwan*

Tiling Artifact Reduction for JPEG2000 Image at Low Bit-Rate

Xing Qin Xiao-Lang Yan Chong-Peng Yang Yang Ye, *Zhejiang University, PR. China*

An Efficient JPEG2000-Based Human Image Storage System

Chien-Wu Tsai and Chih-Yuan Hsu, *Lunghwa University of Science and Technology, Taiwan*

Motion Estimation for Content Adaptive Video Compression

Jiancong Luo, Ishfaq Ahmad, Yongfang Liang, Yu Sun, *University of Texas at Arlington*

A High-Performance Architecture of Arithmetic Coder in JPEG2000

Grzegorz Pastuszak, *Warsaw University of Technology, Poland*

Feature Preserving Motion Compression Based on Hierarchical Curve Simplification

Hiroaki Etou, Yoshihiro Okada, Koichi Niijima, *Kyushu University*

Multimedia Processing, Compression and Modeling (II)

An Efficient Eigen-Space Approach for Management of Satellite Image Databases

Lena Chang, S. J. Chang, S. W. Leu, and J. D. Chen, *National Taiwan Ocean University, Taiwan*

Real-Time Facial Feature Extraction Using Statistical Shape Model and Haar-Wavelet Based Feature Search

Fei Zuo and Peter H. N. de With, *Eindhoven University of Technology, Netherlands*

Aggressive Compression of the Dynamics of Handwriting and Signature Signals

Homayoon S.M. Beigi, *Recognition Technologies, Inc.*

Endomorphic Modelling for Two-Dimensional Time-Varying Autoregressive Model Signals

Sarah Lee and Tania Stathaki, *Imperial College London*

A New Method of Second-Order Parallel Adaptive Volterra Filter

Xueqin Zhao, Jianming Lu, Yukihiro Nomura, and Takashi YAHAGI, *Chiba University*

An Adaptive Real-time Background Subtraction and Moving Shadows Detection

Thirapiroon Thongkamwitoon, Supavadee Aramvith, and Thanarat H. Chalidabhongse, *Chulalongkorn University*

Video Data Mining: Rhythms in a Movie

Kimiaki Shirahama Kazuhisa Iwamoto Kuniaki Uehera, *Kobe University, Japan*

Efficient Video Object Segmentation Using Adaptive Background Registration and Edge-Based Change Detection Techniques

Like Zhang, Heng-Ming Tai, and Jiashu Zhang, *University of Tulsa*

Multimedia Processing, Compression and Modeling (III)

Resource-Aware Video Processing Techniques for Ambient Multimedia Systems

Nicholas H. Zamora, Xiaoping Hu, Umit Ogras, and Radu Marculescu, *Carnegie Mellon University, USA*

Understanding and Modeling User Interests in Consumer Videos

Ryoma Oami, Ana Belen Benitez, Shih-Fu Chang, Nevenka Dimitrova, *NEC Corporation, Japan*

Audio-Visual Conference through the Ionosphere at 4 kbps

A. Navarro, J. Angeja, J. Tavares, R. Rodrigues, L. Carvalho, F. Perdigao, *Telecommunications Institute-Aveiro University*

A Statistics Study of the MDCT Coefficient Distribution for Audio

Rongshan Yu, Xiao Lin, Susanto Rahardja, Chi Chung Ko, *Institute for Infocomm Research, Singapore*

Background-Frame Based Motion Compensation for Video Compression

Rong Ding, Qionghai Dai, Wenli Xu and Dongdong Zhu, and Hao Yin, *Tsinghua University, China*

Measuring Blocking Artifacts Using Edge Direction Information

F. Pan, X. Lin, S. Rahardja, E. P. Ong & W. S. Lin, *Institute for Infocomm Research, Singapore*

Lightweight JPEG 2000 Confidentiality for Mobile Environments

Thomas Köckerbauer, Michael Kumar, Andreas Uhl, *Salzburg University, Australia*

Multimedia Architectures and Implementation

A High-Performance Area-Aware DSP Processor Architecture for Video Codecs

Lan-Da Van, Hsin-Fu Luo, Chien-Ming Wu, Wen-Hsiang Hu, Chun-Ming Huang,and Wei-Chang Tsai *Chip Implementation Center (CIC), Taiwan*

Integrating Virtual Camera Controls into Digital Video

Ramazan Savas Aygun, Aidong Zhang, *University of Alabama in Huntsville*

Distributed Construction of Resource-Efficient Overlay Tree by Approximating MST

Yuan LI, Wei Tsang OOI, *National University of Singapore*

Change Aware Distributed File System for a Distributed Search Engine

Minoru Uehara, *Toyo University*

Low-Complexity Linear Array Multiplier for Normal Basis of Type-II

Chiou-Yng Lee and Chung-Jyi Chang, *Chunghwa Telecommunication Laboratories, Taiwan*

Experimental Study of Dual Microphone Systems

Jianfeng Chen, Louis Shue, Koksoon Phua, Hanwu Sun, *A *START, Singapore*

A VLSI Prototype for Hadamard Transform with Application to MPEG -4 Part 10

Ihab Amer, Wael Badawy, and Graham Jullien, *Advanced Technology Information Processing Systems (ATIPS), Canada*

A Fast Algorithm and Hardware Implementation for Rate-Distortion Optimization in JEPG2000

ZHUANG Huai-Yu WU Cheng-Ke DENG Jia-Xian, *Xidian Univ., China*

News Tuner: A Simple Interface for Searching and Browsing Radio Archives

Jon Marston, Gavin MacCarthy, Beth Logan, Pedro Moreno, JM Van Thong, *HP Cambridge Research Lab, USA*

Video Object Detection and Analysis

Merging Rank Lists from Multiple Sources in Video Classification

Wei-Hao Lin and Alexander Hauptmann, *Carenegie Mellon University*

Small and Fast Moving Object Detection and Tracking in Sports Video Sequences

Mukesh A. Zaveri, S. N. Merchant, Uday B. Desai, *Indian Institute of Technology-Bombay, INDIA*

Co-Histogram and Its Application in Video Analysis

Pengwei Hao and Ying Chen, *University of London, UK*

A Dynamic Model Integrating Colour and Shape Information for Objects Tracking in Conditions of Occlusion

Luca Marchesotti, Stefano Piva and C.S Regazzoni, *Dibe - University of Genova, Italy*

A Three-Layer Event Detection Framework and Its Application in Soccer Video

Xiao-Feng Tong, Han-Qing Lu, Qing-shan Liu, *National Laboratory of Pattern Recognition, China*

A Robust Hough-Based Algorithm for Partial Ellipse Detection in Broadcast Soccer Video

Xinguo Yu, Hon Wai Leong, Changsheng Xu, and Qi Tian, *A *START, Singapore*

Patch-based Natural Object Detection Using CF*IRF

Wanjun Jin, Rongrong Wang, Lide Wu, *Fudan University, China*

Applications and Specificities of Synthetic / Synthetic Projective Registration

Emmanuel Garcia and Jean-Luc Dugelay, *Institut Eurécom, France*

Motion-Based Event Detection and Semantic Classification

Wen-Nung Lie, Ting-Chih Lin, and Sheng-Hsiung Hsia, *National Chung Cheng University, Taiwan*

Visual Surveillance Applications and Multimedia Learning

A Hierarchical Database for Visual Surveillance Applications

James Black, Tim Ellis, Dimitrios Makris, *Kingston University, UK*

Fast Head Pose Estimations under Different Lighting Conditions

Wen-Tang Chang, Chao-Kuei Hsieh, and Yung-Chang Chen, *National Tsing Hua University, Taiwan*

A Gesture-Driven Multimodal Interactive Dance System

Gang Qian, Feng Guo, Todd Ingalls, Loren Olson, Jody James, Thanassis Rikakis, *Arizona State University*

A Spatiotemporal Approach to Extract the 3D Trajectory of the Baseball from a Single View Video Sequence

Hubert Shum and Taku Komura, *City University of Hong Kong*

PD5

Nation-Wide RTK-GPS Based on FKP Method and Applications for Human Navigation and Location Based Services

Sumio Usui, Hiroshi Higuchi, Junshiro Kanda, Koji Wakimoto, Satoshi Tanaka and Fumiake Satoh, *Mitsubishi Electric Corporation, Japan*

A Study of Semantic Context Detection by Using SVM and GMM Approaches

Wei-Ta Chu, Wen-Huang Cheng, Ja-Ling Wu, and Jane Yung-jen Hsu, *National Taiwan University, Taiwan*

TORM: A Hybrid Multicast Infrastructure for Interactive Distance Learning

Yi Che, Runting Shi, Yuanchun Shi, *Tsinghua University, China*

Technical Presentation – June 29, 2004, 15:20 ~ 17:00

TP6-1 June 29, 2004, 15:20 ~ 17:00 (R110, 1st Fl.)

Multimedia Retrieval (III)

Chair: Tat-Seng Chua, National University of Singapore, Singapore

Statistical Motion Characterization for Video Content Classification

Chiou-Ting Hsu and Ching-Wei Lee, *National Tsing Hua University, Taiwan*

Audio Segment Retrieval Using a Short Duration Example Query

Atulya Velivelli, ChengXiang Zhai, Thomas S. Huang, *University of Illinois at Urbana-Champaign*

A Dynamic Probabilistic Multimedia Retrieval Model

Tzvetanka I. Ianeva, Arjen P. de Vries, Thijs Westerveld, *Universidad de Valencia*

An Event Model and its Implementation for Multimedia Information Representation and Retrieval

Derik Pack, Rahul Singh, Sean Brennan, and Ramesh Jain, *GeorgiaTech*

Image Retrieval Using Spatial Icons

Joo-Hwee Lim, Jesse S. Jin, *A *STAR, Signapore*

TP6-2 June 29, 2004, 15:20 ~ 17:00 (R107, 1st Fl.)

Video Streaming (II)

Chair: Pohwei Huang, National Chung Hsin University, Taiwan

Congestion-Optimized Multi-Path Streaming of Video over Ad Hoc Wireless Networks

Eric Setton, Xiaoqing Zhu, Bernd Girod, *Stanford University*

Receiver-Based Rate-Distortion Optimized Interactive Streaming for Scalable Bitstreams of Light Fields

Chuo-Ling Chang and Bernd Girod, *Stanford University*

Delay-Sensitive Delivery of Scalable Coded Images over Peer-to-Peer Networks

Xiao Su, Yi Shang and Yuqing Mai, *San Jose State University*

Low Bit-Rate Video Streaming for Face-to-Face Teleconference

Zhen Wen, Zicheng Liu, Michael Cohen, Jin Li, Ke Zheng, Thomas Huang, *University of Illinois at Urbana-Champaign*

Buffer Size Reduction through Buffer Sharing for Streaming

Nima Sarshar, Xiaolin Wu, *McMaster University, Canada*

TP6-3 June 29, 2004, 15:20 ~ 17:00 (R106, 1st Fl.)

Speech and Audio Processing/Recognition (II)

Chair: Ashish Verma, IBM India

A Method for Solmization of Melody

Yongwei Zhu, Mohan Kankanhalli,Sheng Gao, *A *STAR, Singapore*

Music Segmentation by Rhythmic Features and Melodic Shapes

Hung-Chen Chen, Chih-Hsiang Lin, and Arbee L.P. Chen, *National Tsing Hua University, Taiwan*

Articulatory Cl ass Based Spectral Envelope Representation for Voice Fonts

Ashish Verma, Arun Kumar, *IBM India Research Lab*

Multistage Information Fusion for Audio-Visual Speech Recognition

S. M. Chu, V. Libal, E. Marcheret, C. Neti, and G. Potamianos, *IBM T. J. Watson Research Center*

Discrimination of Speech and Monophonic Singing in Continuous Audio Streams Applying Multi-Layer Support Vector Machines

Björn Schuller, Gerhard Rigoll, and Manfred Lang, *Technische Universitaet Muenchen*

Screenplay Alignment for Closed-System Speaker Identification and Analysis of Feature Films

R. Turetsky and N. Dimitrova, *Philips Research*

TP6-4 June 29, 2004, 15:20 ~ 17:00 (R101, 1st Fl.)

Error Concealment for Media Transmission (II)

Chair: Makoto Takizawa, Tokyo Denki University, Japan (tentative)

Error Concealment for JPEG2000 Images Based on Orthogonal Edge Directed Filters

Shuiming Ye, Qibin Sun, and Ee-chien Chang, *A*STAR, Singapore*

On Packet Loss Concealment Artifacts and Their Implications for Packet Labeling in Voice over IP

Steffen Praetholm, Soren S. Jensen, Soren V. Andersen, Manohar N. Murthi , *University of Miami*

Improved Error Concealment Algorithms Based on H.264/AVC Non-Normative Decoder

Li Su, Yuan Zhang, Wen Gao, Qingming Huang,and Yan Lu, *JDL, China*

Error Analysis of MPEG-4 HVXC Parameters at High Frequencies

F. Perdigao, R. Rodrigues, A. Navarro, *Telecommunications Institute-Aveiro University*

Robust Traffic Event Extraction via Content Understanding for Highway Surveillance System

Akio Yoneyama, Chia H. Yeh, and C. -C. Jay Kuo, *KDDI R&D Laboratories Inc., Japan*

TP6-5 June 29, 2004, 15:20 ~ 17:00 (R103, 1st Fl.)

Multimedia Transcoding and Adaptation

Chairs: Alberto del Bimbo, University of Florence, Italy

Chin-Wei Yeh, National Chung-Cheng University, Taiwan

A Power-Aware SNR-Progressive DCT/IDCT IP Core Design for Multimedia Transform Coding

Kuan-Hung Chen, Jiun-In Guo, Jinn-Shyan Wang, and Ching-Wei Yeh, *National Chung Cheng University, Taiwan*

Rate Control Using Probability of Non-Zero Quantized Coefficients

Chi-Wah Wong, Oscar C. Au, Hong-Kwai Lam, *Hong Kong University*

A Fast H.264-Based Picture-In-Picture (PIP) Transcoder

Chih-Hung Li, Han Lin, Chung-Neng Wang, and Tihao Chiang, *National Chiao Tung University, Taiwan*

Content-Based Video Adaptation with User's Preferences

M. Bertini, R. Cucchiara, A. Del Bimbo, A. Prati, *D.I.I. - University of Modena and Reggio Emilia*

Multi-Resolution Meshes for Multiple Target, Single Content Adaptation within the MPEG-21 Framework

HyungSeok Kim, Chris Joslin, Thomas DiGiacomo, Stephane Garchery, Nadia Magnenat-Thalmann, *University of Geneva*

TP6-6 June 29, 2004, 15:20 ~ 17:00 (R104, 1st Fl.)

SS9: Mobile Imaging: Technology and Applications

Chairs: Alexander Loui, Kodak, USA

Shih-Fu Chang, Columbia University, USA

Intelligent Multimedia Content Management on Mobile Devices

Bhavan Gandhi, Alfonso Martinez, and Frank Bentley, *Motorola Labs, USA*

Mobile Media Metadata for Mobile Imaging

Marc Davis, and Risto Sarvas, *University of California, USA*

Video Content Representation on Tiny Devices

Jun Wang, Marcel Reinders, Reginald Lagendijk, Jasper Lindenberg, and Mohan Kankanhalli, *Delft University of Technology, Netherlands*

Network Architecture to Support QoS in Mobile Ad Hoc Networks

Lei Chen and Wendi Heinzelman, *University of Rochester, USA*

Subjective Preference of Spatio-Temporal Rate in Video Adaptation Using Multi-Dimensional Scalable Coding

Yong Wang, Shih-Fu Chang, Alexander C. Loui, *Columbia University*

Poster & Demo – June 29, 2004, 15:00 ~ 16:30

PD6 June 29, 2004, 15:00 ~ 16:30 (International Reception Hall, 1st Fl., 6 sessions)

Multimedia Security and Error Concealment

A Robust Adaptive Image Watermarking Algorithm

Shuangyuan Yang Zhengding Lu Fuhao Zou, *Huazhong University of Science & Technology, Chi*na

A Blind Spatial-Temporal Algorithm Based on 3D Wavelet for Video Watermarking

ZHUANG Huai-yu, LI Ying, WU Cheng-ke, *Xidian Univ., China*

Designated-Verifier Proxy Signatures for E-Commerce

Guilin Wang, *Institute for Infocomm Research, Singapore*

An Error Detection and Concealment Scheme for H.264 Video Transmission

Yen-Lin Tung, Hsiu-Chen Shu, and Jin-Jang Leou, *National Chung Cheng University, Taiwan*

Decoder Motion Vector Estimation for Scalable Video Error Concealment

Ruiduo Yang and Michael S. Brown, *Hong Kong University of Science and Technology*

Hybrid Temporal-Spatial Error Concealment Technique for Video Communications

Tien-Ying Kuo and Sheng-Hui Li, *National Taipei University of Technology, Taiwan*

Error-Resilient Spectral Fine Granular Scalable (SFGS) Video Coding for Network Streaming Applications

Wen-Nung Lie and Cheng-Hsiung Tseng, and Ping-Chang Jui,, *National Chung Cheng University, Taiwan*

Evaluation of RTP Immediate Feedback and Retransmission Extensions

Michael Kropfberger and Hermann Hellwagner, *University of Klagenfurt, Austria*

Multimedia Authoring, Representation and Presentation

A Presentation Authoring Tool for Media Devices Distributed Environments

Hangjin Zhang, Qiong Liu, Surapong Lertsithichai, Chunyuan Liao, Don Kimber, *Univ. of California, Santa Barbara*

MinuteAid: Multimedia Note-Taking in an Intelligent Meeting Room

Dar-Shyang Lee, Jonathan J. Hull, Berna Erol, Jamey Graham, *Ricoh Innovations, Inc.*

WebBoard: A New Display and Browsing Concept for Web Content in Public Areas

Yutaka Kidawara, Koji Zettsu, *Commmunications Research Laboratory, Japan*

An Efficient Algorithm for Video Content Access Control

Anantharaman B. Ashwin A.C., *Motorola India*

Key Determination of Acoustic Musical Signals

Arun Shenoy, Roshni Mohapatra, Ye Wang, *National University of Singapore*

Computationally Inexpensive and Effective Scheme for Automatic Transcription of Polyphonic Music

Ek Tsoon Tan, Weilun Lao, Alvin H. Kam, *A *START, Singapore*

Searching Relevant Syllable Context by Clustering for Alignment in Modern Greek

Raphael Rispoli, Costas Kotropoulos, Ioannis Pitas, *Aristotle University of Thessaloniki, Greece*

Latent Semantic Indexing For Semantic Content Detection of Video Shots

Fabrice Souvannavong and Bernard Merialdo and Benoit Huet, *Institut Eurecom, France*

A Multi-Stream Audio-Video Large-Vocabulary Mandarin Chinese Speech Database

Luhong Liang, Yu Luo, Feiyue Huang, and Ara V Nefian, *Intel Corporation*

Wireless Multimedia Techniques

Optimal Video Stream Transmission Control over Wireless Network

Noriki Uchida, Kazuo Takahata and Yoshitaka Shibata, *Iwate Prefectural University, Japan*

Resource Allocation and Adaptive Routing in Multimedia Low Earth Orbit Satellite Mobile Networks

Chii-Wei Tzeng, Kai-Wei Ke, and Ho-Ting Wu, *Chunghwa Telecommunication Laboratories, Taiwan*

Routing in Wireless Multimedia Home Networks

Hans Scholten, Pierre Jansen and Laurens Hop, *University of Twente, Netherlands*

Optimal Decision Fusion with Applications to Target Detection in Wireless Ad Hoc Sensor Networks

Marco F.Duarte and Yu -Hen Hu, *University of Wisconsin – Madison*

Bandwidth Estimation for Wireless Video Transmission

Ji-An Zhao, Bo Li, Ishfaq Ahmad, *Hong Kong University of Science and Technology*

Uluru: A Platform for Adaptive Mobile Multimedia Applications

Andrew Tokmakoff, Henk Eertink, Johan de Heer, John Anijs, Jaap Reitsma, *Telematica Instituut, Netherlands*

Case Study of a Multimedia Wireless System

Jenny Li, W. Eric Wong, Weiping Guo, *Avaya Research Lab, USA*

Communication-Induced Multimedia Checkpoint Protocol

Masakazu Ono, Tatuya Hirakawa, Hiroaki Higaki, *Tokyo Denki University, Japan*

Distributed Sound Rendering for Interactive Virtual Environments

Ken K.P. Chan, Rynson W.H. Lau, *City University of Hong Kong, Hong Kong*

Human-Machine Interface and Multimedia Architectures

A Tele-robot Assistant for Remote Environment Management

Chunyuan Liao, Qiong Liu, Don Kimber, Surapong Lertsithichai, *Univ. of Maryland, U.S.A*

An User Based Framework for Salient Detail Extraction

G.P. Nguyen and M. Worring, *University of Amsterdam*

Real-Time Human Proxy: An Avatar-Based Interaction System

Daisaku Arita, Hisato Yoshimatsu, Daisuke Hayama, Masashi Kunita, Rin-ichiro *Taniguchi, Kyushu University*

Digiparty - A Decentralized Multi-Party Video Conferencing System

Ling Chen, Chong Luo, Jiang Li, Shipeng Li, *Microsoft Research Asia*

Practical Channel Transition for Near-VOD Services

Wei-De Chien, Yuan-Shiang Yeh and Jia-Shung Wang, *National Tsing Hua University, Taiwan*

Classification of Mobile Micromovies

Antero Metso, Minna Isomursu, Pekka Isomursu, and Lassi Tasajärvi, *Nokia*

SIMD-Efficient Loop Unrolling Design for Embedded Multimedia Applications

Yunyang Dai, Qing Li, Qi Zhang and C.-C. Jay Kuo, *University of Southern California*

Improving Packet Classification for Multimedia Applications in DiffServ Architecture

Chun-Liang Lee, Pi-Chung Wang, Chia-Tai Chan, and Hung-Yi Chang, *Chunghwa Telecom Co., Ltd, Taiwan*

Automatic Audio Archiving System for Panel Discussions

Yuya Akita, Masahiro Hasegawa, Tatsuya Kawahara, *Kyoto University*

Multimedia and Content-based Retrieval

A Query-By-Example Framework to Retrieve Music Documents by Singer

Wei-Ho Tsai and Hsin-Min Wang, *Academia Sinica, Taiwan*

Texture Image Retrieval Based on a Gaussian Mixture Model and Similarity Measure Using a Kullback Divergence

Hua Yuan and Xiao-Ping Zhang, *Ryerson University*

Semi-Automated Relevance Feedback for Distributed Content Based Image Retrieval

Ivan Lee, Ling Guan, *University of Sydney*

Event Driven Semantics Based Ad Selection

Amit Thawani, Srividya Gopalan, and Sridhar V, *Satyam Computer Services Ltd., India*

A Framework for Parsing Colonoscopy Videos for Semantic Units

Yu Cao, Wallapak Tavanapong, Kihwan Kim, Johnny Wong, JungHwan Oh, Piet C. de Groen, *Iowa State University*

Region-based Image Retrieval Using Edgeflow Segmentation and Region Adjacency Graph

Ruey-Feng Chang, Chii-Jen Chen, and Chen-Hao Liao, *National Chung Cheng University, Taiwan*

Content-Based Image Retrieval using Both Positive and Negative Feedback

Feng-Cheng Chang and Hsueh-Ming Hang, *National Chiao Tung University, Taiwan*

Extraction Texture Features from Arbitrary-Shaped Regions for Image Retrieval

Ying Liu, Xiaofang Zhou, Wei-Ying Ma, *University of Queensland*

Similarity-Based Partial Image Retrieval Guaranteeing Same Accuracy as Exhaustive Matching

Akisato Kimura, Takahito Kawanishi and Kunio Kashino, *NTT Corporation, Japan*

Qos, Rate Control and Scalable Description Transmission

A Compensating Method Based on SOM for Nonlinear Distortion in 16 QAM-OFDM System

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Proactive Frame-Skipping Decision Scheme for Variable Frame Rate Video Coding

F. Pan, X. Lin, S. Rahardja, K. P. Lim, Z. G. Li, D. J. Wu, S. Wu, *A *START, Singapore*

Effective Caching Algorithm by Minimizing Normalized Buffer Size over Constant Bit Rate Channel

Hyung Rai Oh and Hwangjun Song, *Hongik University, Korea*

On Bandlimited Signals with Minimal Space/Time-Bandwidth Product

Y. V. Venkatesh, S. Kumar Raja and G. Vidya Sagar, *Indian Institute of Science*

Adaptive Video Streaming in Lossy Networks: Versions or Layers?

Ivana Radulovic, Pascal Frossard and Olivier Verscheure, *Swiss Federal Institute of Technology*

Temporal Scalable Video Transmission using Multi-Reference Prediction Chain Coding

Xiaosen Lin, Qionghai Dai, *Tsinghua University, Beijing, PR. China*

Adaptive MPEG-4 Video Transmission over PSTN Using Buffer Constraints and RTP Feedback

Dong Jiang, Bo Li, Wei Li, Bo Bi,Xue-mei and Jing-jie Li, *Beijing University of Aeronautics & Astronautics, PR. China*

June 30, 2004

Technical Presentation – June 30, 2004, 10:20 ~ 12:00

TP7-0 June 30, 2004, 10:20 ~ 12:00 (Auditorium, 10th Fl.)

Watermarking, Fingerprinting and Authentication (I)

Chair: Oscal T.-C. Chen, National Chung Cheng University, Taiwan

Highly Imperceptible Video Watermarking with the Watson's DCT-Based Visual Model

Han-Min Tsai, Long-Wen Chang, *National Tsing Hua University, Taiwan*

A Crypto Signature Scheme for Image Authentication over Wireless Channel

Qibin Sun, Shuiming Ye, Ching-Yung Lin and Shih-Fu Chang, *A*STAR, Singapore*

An Analysis-by-Synthesis Echo Watermarking Method

Wen-Chih Wu and Oscal T.-C. Chen, *National Chung Cheng University, Taiwan*

Multiple Watermarking: Is Power Sharing Better Than Time Sharing?

Yi-Wen Liu, Julius O. Smith, *Stanford University*

TP7-1 June 30, 2004, 10:20 ~ 12:00 (R110, 1st Fl.)

Video Summarization (I)

Chair: Ajay Divakaran, Mitsubishi Electric Research Lab. USA

Design and Evaluation of a Music Video Summarization System

Lalitha Agnihotri, Nevenka Dimitrova, John R. Kender, *Philips Research*

Effective and Efficient Sports Highlights Extraction Using the Minimum Description Length Criterion in Selecting GMM Structures

Ziyou Xiong, Regunathan Radhakrishnan, Ajay Divakaran and Thomas S. Huang, *Univ. of Illinois at Urbana-Champaign*

Contextual Browsing for Highlights in Sports Video

Peng Wang, Rui Cai, Shi-Qiang Yang, *Tsinghua University, China*

Video Segmentation Based on Sequential Change Detection

Zhenyan Li, Hong Lu, and Yap-Peng Tan, *Nanyang Technological University*

Video Summarization by Video structure Analysis and Graph Optimization

Shi Lu, Irwin King and Michael R. Lyu, *Chinese university of Hong Kong*

TP7-2 June 30, 2004, 10:20 ~ 12:00 (R107, 1st Fl.)

Sound / Speech Processing and Retrieval

Chair: M. Betser, IRISA / INRIA Rennes, France

Multiple Events Tracking in Sound Tracks

M. Betser, G. Gravier, *IRISA / INRIA Rennes*

Speech Emotion Classification with the Combination of Statistic Features and Temporal Features

Dan-Ning Jiang, Lian-Hong Cai, *Tsinghua University, China*

A Spectral Conversion Approach to the Iterative Wiener Filter for Speech Enhancement

A. Mouchtaris, J. Van der Spiegel, and P. Mueller, *University of Pennsylvania*

Methods for Improving Robustness of Decision Tree in Mandarin Speech Recognition

Xianghua Xu and Jie Zhu, and Qiang Guo, *Shanghai Jiaotong University*

Automatic Pronunciation Assessment for Mandarin Chinese

Jiang-Chun Chen, Jyh-Shing Roger Jang, Jun-Yi Li and Ming-Chun Wu, *National Tsing Hua University, Taiwan*

TP7-3 June 30, 2004, 10:20 ~ 12:00 (R106, 1st Fl.)

Automatic Indexing

Chair: B. Schuller, Technische Universitaet Muenchen, Germany

A Method and User Interface for Instructional Video Indexing

Lijun Tang and John R. Kender, *Columbia University*

Automatic Image Captioning

Jia-Yu Pan, Hyung-Jeong Yang, Pinar Duygulu and Christos Faloutsos, *Carnegie Mellon University*

Modeling Timing Features in Broadcast News Video Classification

Wei-Hao Lin and Alexander Hauptmann, *Carenegie Mellon University*

Online Feature Selection Based on Generalized Feature Contrast Model

Wei Jiang, Mingjing Li, Hongjiang Zhang, Jinwei Gu, *Microsoft Research Asia*

Applying Bayesian Belief Networks in Approximate String Matching for Robust Keyword-Based Retrieval

Björn Schuller, Ronald Müller, Gerhard Rigoll, and Manfred Lang, *Technische Universitaet Muenchen*

TP7-4 June 30, 2004, 10:20 ~ 12:00 (R101, 1st Fl.)

Multimedia Communications/Networking (I)

Chair: Chi-Wah Kok, Hong Kong University of Science and Technology, Hong Kong

Evaluation of AMR-NB and AMR-WB in Packet Switched Conversational Communications

Hervé Taddei, Imre Varga, Laetitia Gros, Catherine Quinquis, Jean Yves Monfort, Frank Mertz, Thorsten Clevorn, *Siemens AG, ICM MP*

Jitter Detection for Layered Multimedia Multicast Traffic

Siu-Ping CHAN, and Chi-Wah KOK, *Hong Kong University of Science and Technology*

Bandwidth Borrowing Schemes for Instantaneous Video-On-Demand Systems

Salahuddin A. Azad, Manzur Murshed and Laurence S. Dooley, *Monash University*

Modeling the Delays of Successively-Transmitted Internet Packets

Mark Kalman and Bernd Girod, *Stanford University*

TP7-5 June 30, 2004, 10:20 ~ 12:00 (R103, 1st Fl.)

SS10: Content Based Music Structure Analysis

Chair: Changsheng Xu, I2R, Singapore

Repeating Pattern Discovery from Acoustic Musical Signals

Muyuan Wang, Lie Lu, Hong-Jiang Zhang, *Microsoft Research Asia, China*

Unsupervised Classification of Music Genre Using Hidden Markov Model

Xi Shao, Changsheng Xu, Mohan S Kankanhalli, *Institute for Infocomm Research*, Singapore

Song-Specific Bootstrapping of Singing Voice Structure

George Tzanetakis, *University of Victoria, Canada*

Mining Frequent Closed Structures in Streaming Melody Sequences

Hua-Fu Li and Suh-Yin Lee and Man-Kwan Shan, *National Chiao-Tung University, Taiwan*

Graphical Expression of the Mood of Music

Rumi Hiraga, Noriyuki Matsuda, *Bunkyo University, Japan*

Technical Presentation – June 30, 2004, 13:20 ~ 15:00

TP8-1 June 30, 2004, 13:20 ~ 15:00 (R110, 1st Fl.)

Watermarking, Fingerprinting and Authentication (II)

Chair: Andreas Uhl, Salzburg University, Austria

Content-Dependent Multipurpose Watermarking Resistant against Generalized Copy Attack

Chun-Shien Lu and Chao-Yong Hsu, *Academia Sinica, Taiwan*

Robustness against Unauthorized Watermark Removal Attacks via Key-dependent Wavelet Packet Subband Structures

Werner Dietl and Andreas Uhl, *Salzbrug, University, Austria*

Detecting Tampered Image Blocks Using Error Correcting Code

Yongdong Wu, *Institute for Infocomm Research, Singapore*

Robust Wavelet-Based Blind Image Watermarking Against Geometrical Attacks

Gui Xie, Hong Shen, *Japan Advanced Institute of Science and Technology*

TP8-2 June 30, 2004, 13:20 ~ 15:00 (R107, 1st Fl.)

Video Summarization (II)

Chair: Dr. Dirk Farin, Technische Universiteit Endhoven, The Netherland

Adaptive Fast Playback-Based Video Skimming Using a Compressed-Domain Visual Complexity Measure

Kadir A. Peker, Ajay Divakaran, *Mitsubishi Electric Company*

Stained-Glass Visualization for Highly Condensed Video Summaries

Patrick Chiu, Andreas Girgensohn, Qiong Liu, *FX Palo Alto Laboratory, Inc.*

Automatically Summarize Musical Audio Using Adaptive Clustering

Changsheng Xu, Xi Shao, Naumunu C. Maddage, Mohan S. Kankanhalli, Qi Tian, *Institute for Infocomm Research, Singapore*

Automatic Generation of Video Summaries for Historical Films

Stephan Kopf, Thomas Haenselmann, Dirk Farin, Wolfgang Effelsberg, *University of Mannheim*

TP8-3 June 30, 2004, 13:20 ~ 15:00 (R106, 1st Fl.)

Content-based Image / Video Retrieval

Chair: Dr. Atul Sajjanhar, Deakin University, Australia

Content-Based Photo Album Management Using Faces' Arrangement

Mohamed Abdel-Mottaleb and Longbin Chen, *University of Miami*

Discriminating Shape Descriptors Based on Connectivity

Atul Sajjanhar, Guojun Lu, Dengsheng Zhang, *Deakin University*

Semantic Repository Modeling in Image Database

Ruofei Zhang and Zhongfei (Mark) Zhang, Zhongyuan Qin, *State Univ. of New York at Binghamton*

Video Feature Selection Using Fast-Converging Sort-Merge Tree

Yan Liu and John.R.Kender, *Columbia University*

Distributed Hosting of Web Content with Erasure Coding and Unequal Weight Assignment

Jin Li and Cha Zhang, *Microsoft Research*

TP8-4 June 30, 2004, 13:20 ~ 15:00 (R101, 1st Fl.)

Multimedia Communications/Networking (II)

Chair: Dr. Manoj K. Panda, Satyam Computer Services Ltd, USA

Supporting Non-Adaptable Multimedia Flows by a TCP-Friendly Transport Protocol

Shengyuan Jan and Wanjiun Liao, *National Taiwan University, Taiwan*

Access Control Method with Variable Retransmission Probability in Ad-Hoc Networks

Yosuke NAKAMURA, Xuejun TIAN and Tetsuo IDEGUCHI, and Takashi OKUDA, *Aichi Prefectural University*

Object-Oriented Harmonization of Multimedia XML Applications

Yih-Feng Chen, May-Chen Kuo, Xiaoming Sun and C.-C. Jay Kuo, *University of Southern California*

Loss Sharing with TTL Routing

Manoj K Panda and S H Srinivasan, *Satyam Computer Services Ltd.*

Robust Video Transmission Using MPEG Markup Language and Adaptive Error Correction Codes

Xiaoming Sun and C.-C. Jay Kuo, *University of Southern California*

TP8-5 June 30, 2004, 13:20 ~ 15:00 (R103, 1st Fl.)

Multimedia Applications

Chair: Ullas Gargi, HP Labs, USA

An Overlay Based QoS-Aware Voice-Over-IP Conferencing System

Xiaohui Gu, Klara Nahrstedt, Rong N. Chang, Zon-Yin Shae, *University of Illinois*

Enhanced Key Management for Cable TV Service

Yiu-Wing Leung, *Hong Kong Baptist University*

A Real-Time and Color-Based Computer Vision for Traffic Monitoring System

Mao-Chi Huang and Shwu-Huey Yen, *Tamkang University, Taiwan*

PathMarker: Systems for Capturing Trips

R. Samadani, D. Mukherjee, U. Gargi, N. Chang, D. Tretter and M. Harville, *Hewlett-Packard Laboratories (HP)*

Looking at Projected Documents: Event Detection & Document Identification

Ardhendu Behera, Denis Lalanne and Rolf Ingold, *University of Fribourg*

TP8-6 June 30, 2004, 13:20 ~ 15:00 (R104, 1st Fl.)

SS11: Content Understanding and Transcoding Techniques for Media Adaptation

Chairs: Belle Tseng, IBM T. J. Watson, USA

Wei-Ying Ma, Microsoft Research Asia, China

Self-Aware Distributed AV Sensor and Actuator Networks for Improved Media Adaptation

R. Lienhart and I. Kozintsev, *Intel Corporation*

Semantic-Enhanced Distribution and Adaptation Networks

B. Shen, Z. Xu, S. Wee, J. Apostolopoulos, *HP Labs, California*

Content Transcoding Middleware for Pervasive Geospatial Intelligence Access

C.-Y. Lin, A. Natsev, B. L. Tseng, M. Hill, J. R. Smith, C.-S. Li, *IBM T. J. Watson Center*

Maximizing Information Throughput for Multimedia Browsing on Small Displays

X. Xie, W.-Y. Ma, H.-J. Zhang, *Microsoft Research Asia, China*

Towards Maximizing the End-User Experience

A. Divakaran, A. Vetro, and Takashi Kan, *Mitsubishi Electric Research labs*

Technical Presentation – June 30, 2004, 15:20 ~ 17:00

TP9-1 June 30, 2004, 15:20 ~ 17:00 (R110, 1st Fl.)

Human-Machine Interface and Interactive TV

Chair: Yong Rui, Microsoft

Digital Interactive Television Services for Converged IP and DVB Networks

Muhammed HAQUE, Takebumi ITAGAKI, John COSMAS, *Brunel University*

An Interactive Digital Television System Designed for Synchronised and Scalable Multi-Media Content over DVB and IP Networks

Takebumi ITAGAKI, John COSMAS, Muhammed HAQUE, *Bruenl University*

MITv – A Solution for an Interactive TV Based on IP Multicast over Satellite

L. Lancerica, L. Dairaine, F. de Belleville, H. Thalmensy, C. Fraboul, *ENSICA*

My Portal Viewer for Content Fusion based on User's Preferences

Yukiko Kawai, Daisuke Kanjo and Katsumi Tanaka, *Communications Research Laboratory*

Breaking the Clock Face HIP

Zhenqiu Zhang, Yong Rui, Thomas Huang, Cem Paya, *University of Illinois*

TP9-2 June 30, 2004, 15:20 ~ 17:00 (R107, 1st Fl.)

Virtual Reality and Imaging

Chair: Chia-Wen Lin, National Chung Cheng University, Taiwan

Automatically Designed 3-D Environments for Intuitive Exploration

Nelson L. Chang and Amir Said, *Hewlett-Packard Laboratories*

Sharing Virtual Acoustic Spaces over Interactive TV Programs-Presenting "Virtual Cheering" Application

Tatiana Aires Tavares, Aquiles Burlamaqui, David André da Silva Albino, Clístenes Simonetti, Guido Lemos de Souza Filho, *Natalnet Lab*

Conceptual Farm

Shuen-Huei Guan, Sheng-Yao Cho, Yu-Te Shen, Rung-Huei Liang, Bing-Yu Chen, Ming Ouhyoung, *National Taiwan University, Taiwan*

Reconstructing Dense Light Field from a Multi-Focus Images Array

Akira Kubota, Kiyoharu Aizawa, Tsuhan Chen, *Carnegie Mellon University*

Kansei Retrieval Method using Visual Pattern Image Coding for Virtual Reality Space Presentation

Kaoru Sugita, Tomoyuki Ishida, Akihiro Miyakawa, Leonard Barolli, Yoshitaka Shibata, *Iwate Prefectural University*

TP9-3 June 30, 2004, 15:20 ~ 17:00 (R106, 1st Fl.)

Multimedia Security and Content Protection

Chair: Yao-Jen Chang, Industrial Technology Research Institute, Taiwan

A VQ-Based Image-in-Image Data Hiding Scheme

Feng-Hsing Wang, Jeng-Shyang Pan, Lakhmi C. Jain, and Hsiang-Cheh Huang, *National Chiao Tung University, Taiwan*

Perceptual Cryptography on SPIHT Compressed Images or Videos

Shiguo Lian, Jinsheng Sun, Zhiquan Wang, *University of Science and Technology, Nanjing China*

Robust Lossless Image Data Hiding

Zhicheng Ni, Yun Q. Shi, Nirwan Ansari, Wei Su, Qibin Sun and Xiao Lin, *New Jersey Institute of Technology*

Biometrics-Based Cryptographic Key Generation

Yao-Jen Chang, Wende Zhang, Tsuhan Chen, *Industrial Technology Research Institute, Taiwan*

TP9-4 June 30, 2004, 15:20 ~ 17:00 (R101, 1st Fl.)

Multimedia Authoring and Presentation

Chair: Yuchi Nakamura, Kyoto University, Japan

An Ontology-Driven Mediation Approach to Multimedia Archiving and Exhibition

Jyi-Shane Liu, Mu-Hsi Tseng, Tse-Kai Huang, *National Chengchi University, Taiwan*

Design of an Intelligent Distributed Multimedia Presentation System Using Temporal Algebra and SMIL

Anthony Y. Chang, *Overseas Chinese Institute of Technology, Taiwan*

Video Editing Based on Behaviors-for-Attention ---An Approach to Professional Editing Using a Simple Scheme

Motoyuki Ozeki, Yuichi Nakamura, Yuichi Ohta, IEMS, *University of Tsukuba, Japan*

An Object-Based HyperVideo Authoring System

Han-Bin Chang, Hui-huang Hsu, Yi-Chun Liao, Timothy K. Shih,Chia-Tong Tang, *Tamkang University, Taiwan*

Adaptive Synchronization Framework for Navigated Hypermedia Document Presentation

Kuo-Yu Liu and Herng-Yow Chen, *National Chi-Nan University, Taiwan*

TP9-5 June 30, 2004, 15:20 ~ 17:00 (R103, 1st Fl.)

SS12: Bridging Cognitive Gap towards Media Indexing

Chairs: Jun Ohya, Waseda University, Japan

Toshikazu Kato, Chuo Univ., Japan

Zhongfei Zhang, SUNY Binghamton, USA

Exploiting the Cognitive Synergy between Different Media Modalities in Multimodal Information Retrieval

Zhongfei (Mark) Zhang, Ruofei Zhang, and Jun Ohya, *SUNY Binghamton, USA*

Data-Driven Approach for Bridging the Cognitive Gap in Image Retrieval

Xinjing Wang, Wei-Ying Ma, and Xing Li, *Microsoft Research Asia*

Trans-Category Retrieval Based on Subjective Perception Process Models

Toshikazu Kato, *Chuo University, Japan*

Cognitive Bridge between Haptic Impressions and Texture Images for Subjective Image Retrieval

Yuichi Kobayashi, Jun Ohya, and Zhongfei Zhang, *ATR, Japan*

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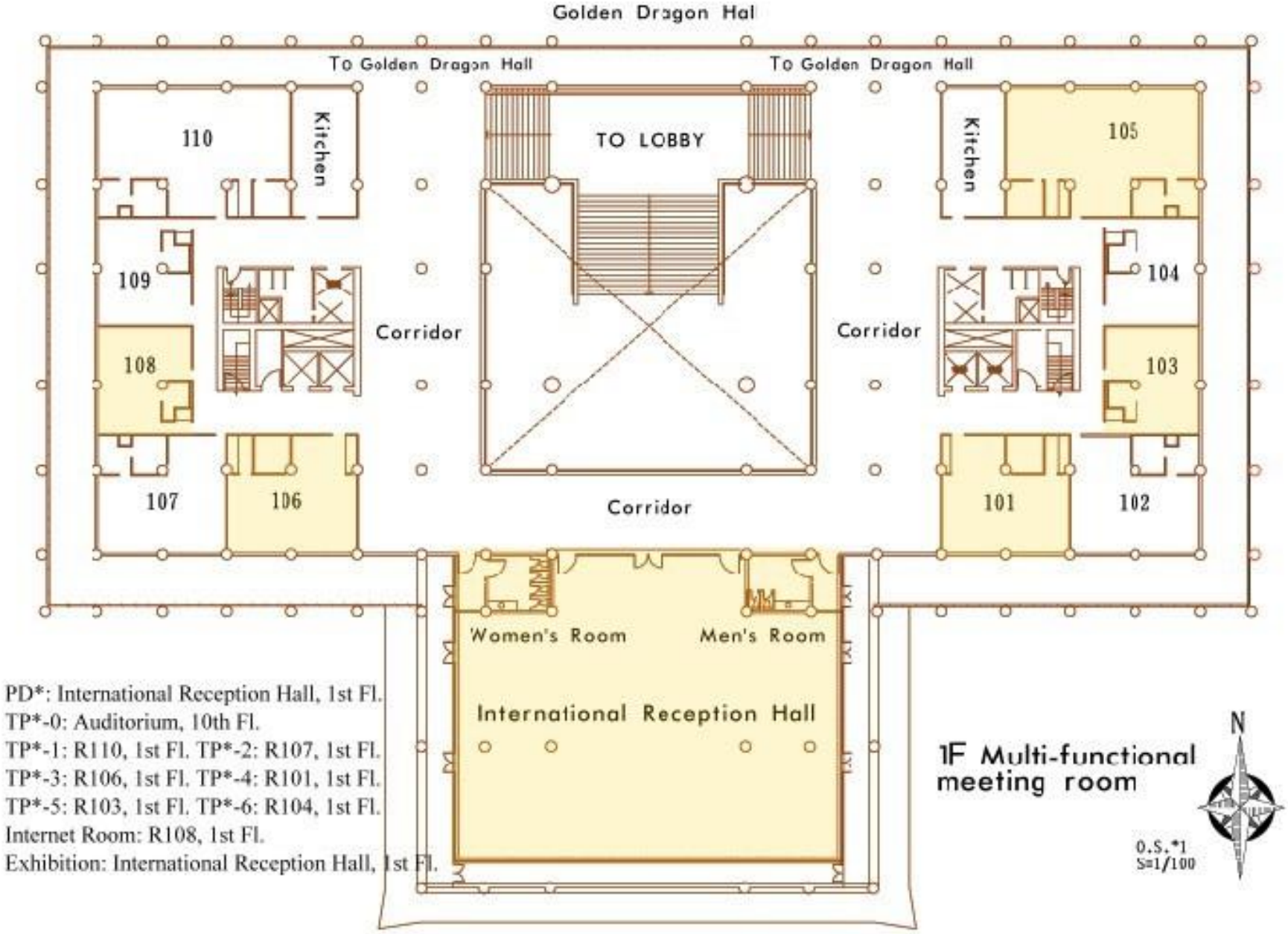
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