

# PCM 2007

**Pacific-Rim Conference  
on Multimedia**

**11-14 December 2007  
Hong Kong**



## Preliminary Program



香港城市大學  
City University of Hong Kong



香港科技大學  
The Hong Kong University of  
Science and Technology



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## Foreword

The Pacific-Rim Conference on Multimedia (PCM) was held in Hong Kong, at the City University of Hong Kong, during 11-14 December 2007. Started in 2000, PCM had been held in various places around the Pacific Rim, including Sydney, Beijing, Hsinchu, Singapore, Tokyo, Jeju, and Zhejiang respectively in chronological order. PCM is a major annual international conference organized as a forum for the dissemination of state-of-the-art technological advances and research results in the fields of theoretical, experimental, and applied multimedia analysis and processing.

PCM 2007 was organized into 5 different tracks with a total of 247 submissions from 26 countries and regions including Australia, Belgium, Canada, China, Japan, Korea, New Zealand, Singapore, Spain, Taiwan, the United Kingdom and the USA. Among the five tracks, Multimedia Analysis and Retrieval received the most number of submissions (34% of the submissions). After a rigorous review process, 73 papers were accepted for oral presentations, giving an acceptance rate of under 29% for PCM 2007. In addition, 21 papers were accepted for poster presentations. We would like to thank all the Track Chairs and the reviewers for their timely handling of the paper reviews. We are particularly grateful to Dr. Chong-Wah Ngo and his team for their support of the Web-based review system throughout the process. We are also indebted to the Special Sessions Chairs, Prof. Qi Tian and Prof. Timothy Shih, for the organization of the two special sessions on *The AVS China National Standard* and *Multimedia Information System for Biomedical Research* respectively. Papers in this volume cover a range of pertinent topics in the field including, content-based and semantic analysis of images, audio and video data as well as 3D models; video multicasts over wireless Ad Hoc networks; and image and video watermarking and authentication, etc.. We also thank our keynote speakers, Prof. Edward Chang and Prof. Alan Hanjalic, for their enlightening speeches.

The local organization of PCM 2007 would not have been possible without the concerted effort and support of researchers from Hong Kong and the region who work in the multimedia field. Their contributions are duly acknowledged in the following page. Last but not least, we thank the K.C. Wong Foundation for their generous sponsorship to PCM 2007.

**Horace H S Ip  
Oscar C Au  
Howard Leung  
Ming-Ting Sun  
Wei-Ying Ma  
Shi-Min Hu**

**December 2007**

# Organization

## Organizing Committee

Conference Chairs:	Horace H. S. Ip (City University of Hong Kong) Oscar C. Au (Hong Kong University of Science & Technology)
Program Chairs:	Ming-Ting Sun (University of Washington, USA) Wei-Ying Ma (Microsoft Research Asia, China) Shi-Min Hu (Tsinghua University, China)
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Web Chair:	Chong-Wah Ngo (City University of Hong Kong)

## Advisory Committee

Ramesh Jain (University of California, Irvine, USA)  
Thomas S. Huang (University of Illinois at Urbana Champaign, USA)  
Sun-Yuan Kung (Princeton University, USA)  
Yong Rui (Microsoft China Research & Development Group)  
Hongjiang Zhang (Microsoft China Research & Development Group)



## Getting to City University of Hong Kong

City University of Hong Kong (CityU) is located at Kowloon Tong Station which can be reached by the MTR train system. Bus service is also available but is not recommended.

### ◆ Getting to CityU By MTR Kwun Tong Line

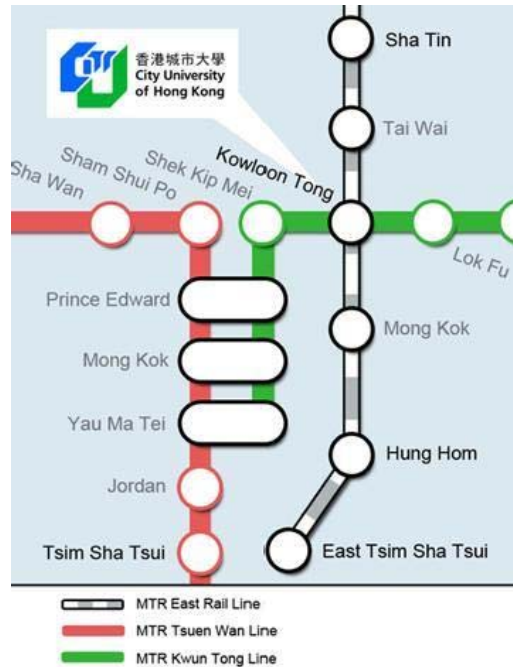


If you are coming by MTR Kwun Tong Line, get off at Kowloon Tong station. Follow the signs to City University (Exit C), then take Exit C2, which leads to Festival Walk shopping centre. Go up to Level LG-1 and find the escalator next to Shop LG1-10, which will take you to one end of the underpass. When you emerge from the underpass, CityU's main entrance is right in front of you.

### ◆ Getting to CityU By MTR East Rail Line



If you are coming by MTR East Rail Line, get off at Kowloon Tong station. Follow the signs to the MTR station, turn right and you will get to MTR Exit C2, which leads to Festival Walk shopping centre. Go up to Level LG-1 and find the escalator next to Shop LG1-10, which will take you to one end of the underpass. When you emerge from the underpass, CityU's main entrance is right in front of you. Alternatively, if you are coming from the direction of Lo Wu, a concrete bridge will take you into Festival Walk shopping centre. The escalator facing you across the floor leads to the underpass to CityU.



### ◆ Getting to CityU By Taxi

Ask the taxi driver to take you to City University of Hong Kong, Tat Chee Avenue, Kowloon Tong, Kowloon and drop you off at the University Circle. When you get out of the taxi, you are in front of the Academic Building and Cheng Yick-Chi Building.

Some MTR stations are close to our selected hotels:

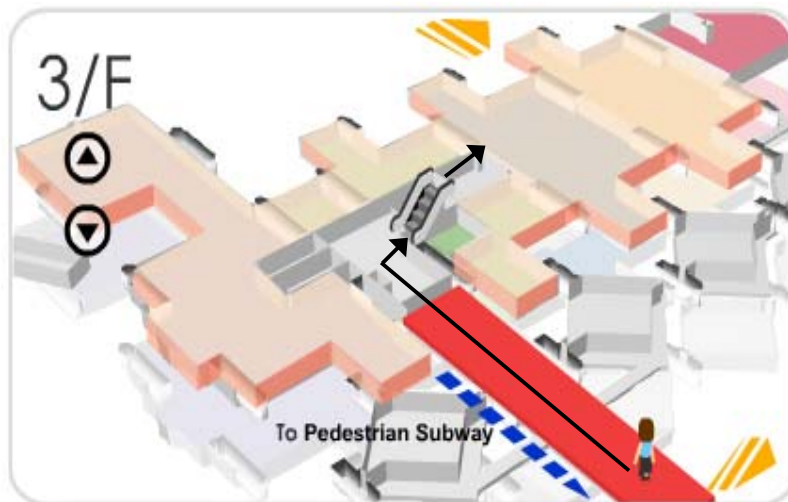
- ◆ 36 Hotel  
3 minutes walk to Prince Edward station
- ◆ Royal Plaza Hotel  
directly connected to Mong Kok East station
- ◆ Langham Place Hotel  
directly connected to Mong Kok station

## Getting to the Conference Venues in CityU

If you get to CityU by MTR and find the CityU underpass (pedestrian subway), walk straight to the end, then you will see the Academic Building in front of you.



The main entrance at CityU is characterized by the red doors. Enter the Academic Building through the red doors. Go straight ahead past the Bookshop and you will find an escalator on your right. Go up one level to the University Concourse on the 4<sup>th</sup> floor of the Academic Building.

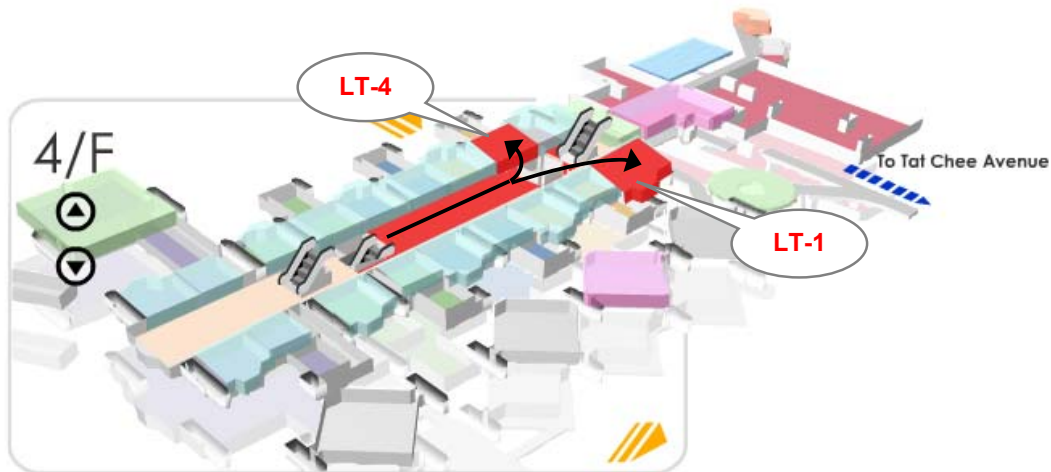


The directions to the conference venues Lecture Theatre 1 (LT-1), Lecture Theatre 4 (LT-4), Y5202, Y5203, Y5204 and Y5205 are provided on the next page.

The directions to the lunches, reception and banquet locations are provided on p.8.

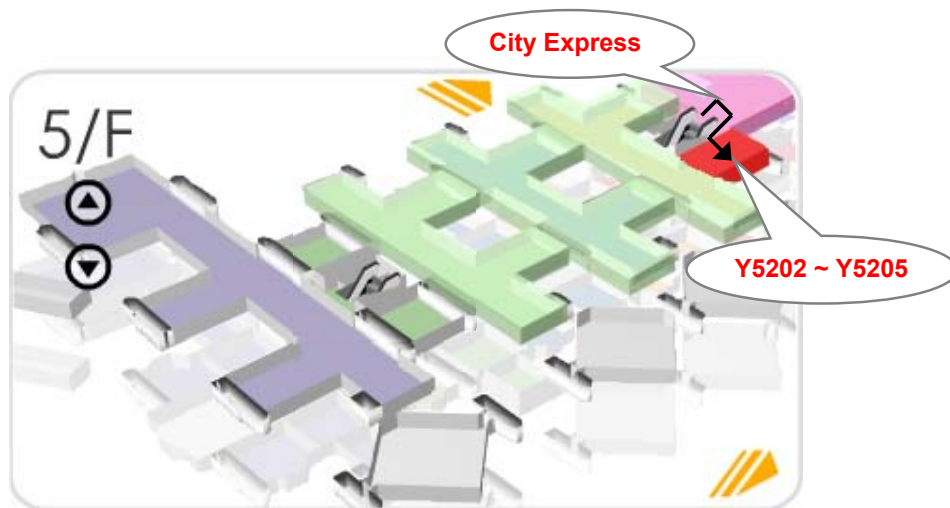
## Lecture Theatres - LT-1 and LT-4, 4/F Academic Building

After getting off the escalator on the 4<sup>th</sup> floor on the University Concourse, walk straight until you see another escalator. The conference venue LT-1, for the opening address and keynote speeches, is located on the right hand side. Another venue LT-4, for session presentations, is located on the left hand side.



## Classrooms - Y5202, Y5203, Y5204, and Y5205, 5/F Academic Building

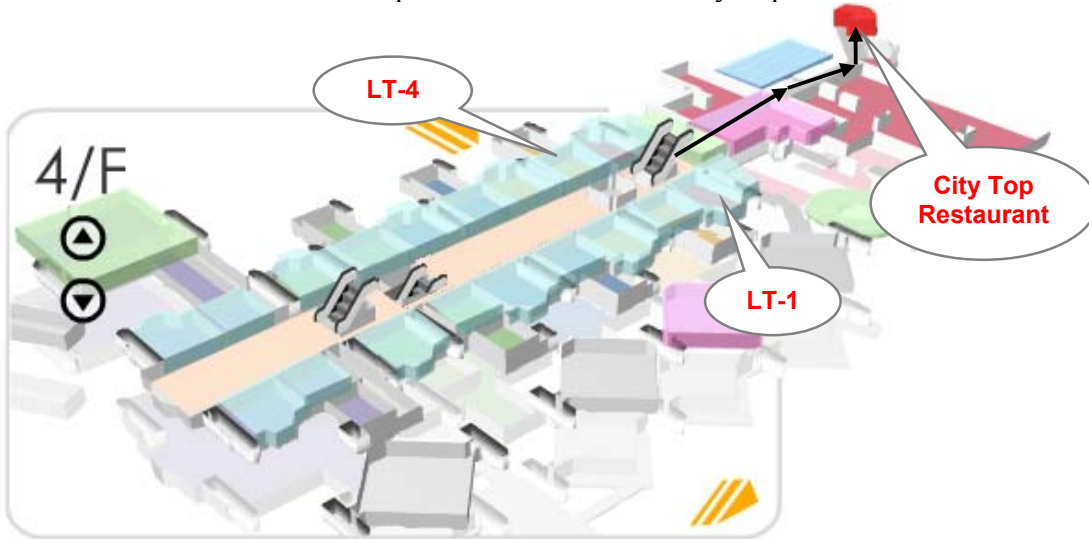
Take the escalator located between LT-1 and LT-4 to go up one level to the 5<sup>th</sup> floor of the Academic Building. Turn around and walk away from City Express. You will find the classrooms Y5202, Y5203, Y5204 and Y5205 located on your left hand side.





## Lunches and Reception Location - City Top Restaurant, 9/F Amenities Building

On the 4<sup>th</sup> floor, find the red doors located beside LT-1. Walk through the red doors and get to the covered terrace. Follow the sign of “Amenities Building” and walk along the pathway. Keep walking along the pathway and pass the swimming pool, you will find Lift 19 and Lift 20 beside LT-401. Take either lift up to the 9<sup>th</sup> floor where City Top Restaurant is located.



## Banquet Location - House of Canton (翰騰閣), LG2-40, Festival Walk, Kowloon Tong

House of Canton Restaurant is located on the LG-2 level in Festival Walk shopping centre. Leave from the main entrance (the red doors on the 3<sup>rd</sup> floor) at CityU and walk along the underpass which leads to Festival Walk shopping centre. Take the escalator down to the LG-1 level of Festival Walk. You will see another escalator on your left hand side. Take the escalator down to the LG-2 level, and then look for House of Canton Restaurant.



# Conference Schedule

	December 11	December 12	December 13	December 14
8:30		<b>Registration</b>		
8:45		<b>Opening Speech</b>		
9:00	<b>Tutorial 1</b> (Y5202) Computational Models for Just-Noticeable Difference (JND) in Visual Signal	<b>Tutorial 2</b> (Y5203) Multi-View Video Coding for 3D Multimedia Services	<b>Keynote-1 (LT-1)</b> Web-Scale Multimedia Data Management Challenges and Remedies	<b>Keynote-2 (LT-1)</b> Content You Like, Anytime & Anyplace Multimedia Research for New TV Concepts
10:00		<b>Coffee Break and Photo Taking</b> (University Circle)	<b>Best Paper Session (LT-1)</b>	<b>Coffee Break</b>
10:20	<b>Coffee Break</b>			
10:30		<b>Session-1</b> (LT-4) Image Classification and Retrieval	<b>Special Session-1</b> (Y5203) The AVS China National Standard Technology, Applications and Products	
10:40	<b>Tutorial 1 (cont.)</b> (Y5202)	<b>Tutorial 2 (cont.)</b> (Y5203)	<b>Coffee Break</b>	<b>Session-9</b> (LT-4) Video Communication and Systems
11:00			<b>Session-6</b> (LT-4) Audio, Speech and Sound Processing	<b>Session-10</b> (Y5203) Video Compression and Processing
12:00			<b>Session-7</b> (Y5203) Digital Watermarking	
12:10		<b>Lunch</b>		<b>Lunch</b>
12:20			<b>Lunch</b>	
12:40				
14:00	<b>Tutorial 4</b> (Y5203) Sport Video Content Analysis and Application	<b>Session-2</b> (LT-4) Human Face and Action Recognition	<b>Session-3</b> (Y5203) H.264 Video Coding	<b>Session-11</b> (LT-4) Face and 3D Model Analysis
15:00			<b>Poster Session-1</b> (Y5204) Multimedia Content Processing and Application	<b>Session-12</b> (Y5203) Multimedia Applications
15:20	<b>Coffee Break</b>		<b>Coffee Break</b>	
15:40	<b>Tutorial 4 (cont.)</b> (Y5203)	<b>Coffee Break</b>		<b>Coffee Break</b>
16:00		<b>Session-4</b> (LT-4) Video Analysis and Retrieval	<b>Session-5</b> (Y5203) Media Security and DRM	<b>Session-13</b> (LT-4) Image Indexing, Identification and Processing
17:00			<b>Special Session-2</b> (LT-4) Multimedia Information Systems for Biomedical Research	<b>Session-14</b> (Y5203) Multimedia processing
17:40				
18:00		<b>Reception</b>		
18:30			<b>Banquet</b>	
20:00				
21:30				

Lunches and Reception: City Top Restaurant, 9/F Amenities Building, City University of Hong Kong

Banquet: House of Canton, LG2-40, Festival Walk, Kowloon Tong

Internet Room and Springer Book Exhibition (starting from December 12): Y5202

## Keynote Speech

### Web-scale Multimedia Data Management: Challenges and Remedies

Prof. Edward Chang  
Google China

Date: 12 December 2007

Time: 9:00-10:00

Venue: Lecture Theatre 1

Session Chair: Prof. Horace H. S. Ip (City University of Hong Kong)

#### Abstract

Text-based search engines have been flourishing. However, despite increasing needs of tools for organizing and searching imagery and video content, we have not seen a successful deployment of a Web-scale multimedia search engine. This talk analyzes main technical challenges of such a deployment, and presents remedies in three areas: feature extraction, similarity characterization, and scalability.

#### Bio



Professor Edward Chang received his M.S. in Computer Science and PhD in Electrical Engineering at Stanford University in 1994 and 1999, respectively. He joined the department of Electrical & Computer Engineering at University of California, Santa Barbara, in September 1999. He received his tenure in March 2003, and was promoted to full professor of Electrical Engineering in 2006. His recent research activities are in the areas of machine learning, data mining, high-dimensional data indexing, and their applications to image databases, video surveillance, and Web mining. Recent research contributions of his group include methods for learning image/video query concepts via active learning with kernel methods, formulating distance functions via dynamic associations and kernel alignment, managing and fusing distributed video-sensor data, categorizing and indexing high-dimensional image/video information, and speeding up Support Vector Machines via parallel matrix factorization and indexing. Professor Chang has served on several ACM, IEEE, and SIAM conference program committees. He co-founded the annual ACM Video Sensor Network Workshop and has co-chaired it since 2003. In 2006, he co-chairs three international conferences: Multimedia Modeling (Beijing), SPIE/IS&T Multimedia Information Retrieval (San Jose), and ACM Multimedia (Santa Barbara). He serves as an Associate Editor for *IEEE Transactions on Knowledge and Data Engineering* and *ACM Multimedia Systems Journal*. Professor Chang is a recipient of the IBM Faculty Partnership Award and the NSF Career Award. He is currently on leave from UC, heading R&D effort at Google/China.

## Keynote Speech

### Content You Like, Anytime & Anyplace: Multimedia Research for New TV Concepts

Prof. Alan Hanjalic  
Delft University of Technology, The Netherlands

Date: 14 December 2007

Time: 9:00-10:00

Venue: Lecture Theatre 1

Session Chair: Prof. Oscar C. Au (Hong Kong University of Science and Technology)

### Abstract

This talk is about much more than just “watching television”. It is about getting the content we like, anytime and anyplace. It is about getting entertained and informed seamlessly and in a personalized fashion wherever we are, and whenever we like it. It is about not feeling the overload caused by enormous multimedia data collections and the continuously increasing TV content production, while at the same time drawing the maximum benefit from the available information. And, finally, it is about maximizing the quality of experience. The science and technology required to bring these scenarios closer to reality are still not entirely mature. In particular, providing access to the right content at the right time, and this also in a way which is efficient enough, and also sufficiently natural and intuitive for the user, is still a challenging problem for the multimedia research community.

In this talk we will analyze the current research trends in the fields of multimedia content analysis, indexing, recommendation and retrieval, in view of the requirements posed by the users at home and mobile users. Based on this analysis, paradigm shifts for multimedia research will be identified and discussed, which are likely to enable practical realization of the envisioned concept of getting the right content anywhere and anytime, and at the acceptable level of service dependability and quality of experience. These shifts require (a) more flexible, adaptive and generic content analysis and indexing approaches, (b) innovative ideas of involving the user naturally and intuitively into the content analysis and management processes, and (c) seamless integration of automatic content analysis solutions, user involvement, and distributed intelligence spread over quickly emerging social (P2P) and device networks.

### Bio



Alan Hanjalic is an Associate Professor of Multimedia Technology at the Department of Mediamatics, Delft University of Technology, The Netherlands. He was a visiting scientist and research fellow at Hewlett-Packard Labs, Palo Alto CA, British Telecom Labs, Ipswich, UK, Philips Research Labs, Briarcliff Manor NY, and Microsoft Research Asia, Beijing, China. Research interests and expertise of Dr. Hanjalic are in the broad area of multimedia information retrieval, with focus on multimedia content analysis and personalized content delivery. He authored and co-authored more than 70 publications, among which the books titled *Image and Video Databases: Restoration, Watermarking and Retrieval* (Elsevier, 2000) and *Content-Based Analysis of Digital Video* (Kluwer Academic Publishers, 2004), and holds a number of EU/US patents. Dr. Hanjalic is a member of Editorial Boards of the *IEEE Transactions on Multimedia* and *Journal of Multimedia*. He was a Guest Editor of the

*International Journal of Image and Graphics, Special Issue on Content-based Image and Video Retrieval*, July 2001, and currently serves as a Guest Editor of the *IEEE Trans. on Multimedia, Special Issue on Integration of Context and Content for Multimedia Management*, and as a Chief Guest Editor of the *Proceedings of the IEEE, Special Issue on Advances in Multimedia Information Retrieval*. He has also served as a Co-Chair of the IS&T/SPIE Conference on Multimedia Content Analysis, Management and Retrieval 2006, Co-Chair of the IS&T/SPIE Conference on Multimedia Content Access: Algorithms and Systems 2007, Technical Program Co-Chair of the ACM Multimedia 2007 conference, Workshops Co-Chair of the ACM Multimedia 2006 conference, and as Area/Track Co-Chair of the MMM 2007, IEEE ICME 2007, PCM 2007 and WWW 2008 conferences. Dr. Hanjalic will serve as a Technical Program Co-Chair of the ACM CIVR 2008 conference, Niagara Falls, Canada, and as a General Co-Chair of the ACM Multimedia 2009 conference, Beijing, China.

## **Tutorials**

### **Tutorial 1: Computational Models for Just-noticeable Difference in Visual Signal**

Speaker: Dr. Weisi Lin (Nanyang Technological University, Singapore)

Date: 11 December 2007

Time: 9:00a.m.-12:00noon

Venue: Y5202

### **Tutorial 2: Multi-view Video Coding for 3D Multimedia Services**

Speaker: Prof. Yo-Sung Ho (Gwangju Institute of Science and Technology [GIST])

Date: 11 December 2007

Time: 9:00a.m.-12:00noon

Venue: Y5203

### **Tutorial 4: Sports Video Content Analysis and Applications**

Speakers: Changsheng Xu (Institute for Infocomm Research, Singapore)  
Hanqing Lu (Chinese Academy of Sciences, China)

Date: 11 December 2007

Time: 2:00p.m.-5:00p.m.

Venue: Y5203

## Technical Tracks

### Track: Multimedia Analysis and Retrieval

Track Chairs: Alan Hanjalic (Delft University of Technology, Netherlands)  
Chong-Wah Ngo (City University of Hong Kong)

Session-1 (12 Dec., 10:30a.m.): Image Classification and Retrieval

Venue: Lecture Theatre 4

Session Chair: Qi Tian (University of Texas San Antonio, USA)

Session-4 (12 Dec., 4:00p.m.): Video Analysis and Retrieval

Venue: Lecture Theatre 4

Session Chair: Bo Zhang (Tsinghua University, China)

Session-6 (13 Dec., 11:00a.m.): Audio, Speech and Sound Processing

Venue: Lecture Theatre 4

Session Chair: Changsheng Xu (Institute For Infocomm Research, Singapore)

Session-11 (14 Dec., 2:00p.m.): Face and 3D Model Analysis

Venue: Lecture Theatre 4

Session Chair: Raymond Wong (City University of Hong Kong)

Session-13 (14 Dec., 4:00p.m.): Image Indexing, Identification and Processing

Venue: Lecture Theatre 4

Session Chair: Xiangdong Zhou (Fudan University, China)

### Track: Multimedia Security Rights and Management

Track Chairs: Qibin Sun (I2R Singapore)  
Oscar C. Au (Hong Kong University of Science & Technology)

Session-5 (12 Dec., 4:00p.m.): Media Security and DRM

Venue: Y5203

Session Chair: Peter Hon Wah Wong (Hong Kong University of Science & Technology)

Session-7 (13 Dec., 11:00a.m.): Digital Watermarking

Venue: Y5203

Session Chair: Kai Chen (Institute For Infocomm Research, Singapore)

### **Track: Multimedia Compression and Optimization**

Track Chairs: Lap-Pui Chau (Nanyang Technological University, Singapore)  
Man Wai Mak (Hong Kong Polytechnic University)

Session-3 (12 Dec., 2:00p.m.): H.264 Video coding  
Venue: Y5203  
Session Chair: L.M. Po (City University of Hong Kong)

Session-10 (14 Dec., 10:30a.m.): Video compression and processing  
Venue: Y5203  
Session Chair: Yui-Lam Chan (Hong Kong Polytechnic University)

Session-14 (14 Dec., 4:00p.m.): Multimedia processing  
Venue: Y5203  
Session Chair: S.C. Chan (Hong Kong University)

### **Track: Multimedia Communication and Networking**

Track Chairs: Pascal Frossard (EPFL, Switzerland)  
Irwin King (Chinese University of Hong Kong)

Session-8 (13 Dec., 4:00p.m.): Media Delivery  
Venue: Y5203  
Session Chair: Irwin King (Chinese University of Hong Kong)

### **Track: Multimedia Systems and Applications**

Track Chairs: Pong Chi Yuen (Hong Kong Baptist University)  
Shing-Chow Chan (University of Hong Kong)

Session 2 (12 Dec., 2:00p.m.): Human Face and Action Recognition  
Venue: Lecture Theatre 4  
Session Chair: Dr. Guoping Qiu (University of Nottingham, UK)

Session-9 (14 Dec., 10:30a.m.): Video Communication and Systems  
Venue: Lecture Theatre 4  
Session Chair: Prof. Nicholas Tran (Santa Clara University, USA)

Session-12 (14 Dec., 2:00p.m.): Multimedia Applications  
Venue: Y5203  
Session Chair: Dr. Ramesh Yerraballi (University of Texas at Arlington, USA)

## Special Sessions

Special Session Chairs: Qi Tian (University of Texas San Antonio, USA)  
Timothy K. Shih (Tamkang University, Taiwan)

Special session-1 (12 Dec., 10:30a.m.): The AVS China National Standard - Technology,  
Applications and Products

Venue: Y5203

Session Chair: Cliff Reader (Chinese Academy of Sciences, China)

Special session-2 (13 Dec., 4:00p.m.): Multimedia Information Systems for Biomedical Research

Venue: Lecture Theatre 4

Session Chair: Su-Shing Chen (Chinese Academy of Sciences, China)

## Best Paper Session

Session Chairs: Shi-Min Hu (Tshinghua University)  
Chong-Wah Ngo (City University of Hong Kong)

Time: 13 Dec, 9:00am

Venue: Lecture Theatre 1

## Poster Sessions

Poster session-1 (13 Dec., 2:00p.m.): Multimedia Content Processing and Applications

Venue: Y5204

Session Chair: Feng Wang (City University of Hong Kong)

Poster session-2 (13 Dec., 2:00p.m.): Multimedia Communication, Watermarking and Coding

Venue: Y5205

Session Chair: Xiao Wu (City University of Hong Kong)



## Presentations

### Session-1: Image Classification and Retrieval

Date and Time: 12 December 2007, 10:30a.m.

Venue: Lecture Theatre 4

Session Chair: Qi Tian (University of Texas San Antonio, USA)

FADA: An Efficient Dimension Reduction Scheme for Image Classification

*Yijuan Lu, Jingsheng Ma, Qi Tian*

Using Camera Settings Templates ("Scene Modes") for Image Scene Classification of Photographs Taken On Manual/Expert Settings

*William Ku, Mohan S. Kankanhalli, Joo-Hwee Lim*

Modeling User Feedback using a Hierarchical Graphical Model for Interactive Image Retrieval

*Jian Guan, Guoping Qiu*

Graph Cuts in Content-based Image Classification and Retrieval with Relevance Feedback

*Ning Zhang, Ling Guan*

A Novel Active Learning Approach for SVM Based Web Image Retrieval

*Jin Yuan, Xiangdong Zhou, Hongtao Xu, Mei Wang, Wei Wang*

### Special Session-1: The AVS China National Standard - technology, applications and products

Date and Time: 12 December 2007, 10:30a.m.

Venue: Y5203

Session Chair: Cliff Reader (Chinese Academy of Sciences, China)

An End-to-End Application System of AVS: AVS-IPTV in China

*Wen Gao, Siwei Ma, Cliff Reader*

An AVS based IPTV System Network Trial

*Zhifeng Jiang, Wen Gao, Hongqi Liu*

Usage of MPEG-2 to AVS Transcoder in IPTV System

*GuoZhong Wang, HaiWu Zhao, Guowei Teng*

The Audio and Video Synchronization Method Used in AVS System

*Zhijie Yang, Xuemin Chen, Jiang Fu, Brian Heng*

### Session-2: Human Face and Action Recognition

Date and Time: 12 December 2007, 2:00p.m.

Venue: Lecture Theatre 4

Session Chair: Dr. Guoping Qiu (University of Nottingham, UK)

Expression-Invariant Face Recognition with Accurate Optical Flow

*Chao-Kuei Hsieh, Shang-Hong Lai, Yung-Chang Chen*

Real-Time Facial Feature Point Extraction

*Ce Zhan, Wanqing Li, Philip Ogunbona, Farzad Safaei*

Local Dual Closed Loop Model Based Bayesian Face Tracking

*Dan Yao, Hong Lu, Xiangyang Xue, Zhongyi Zhou*

View-independent Human Action Recognition by Action Hypersphere in Nonlinear Subspace

*Jian Zhang, Yueting Zhuang*

Efficient Adaptive Background Subtraction based on Multi-Resolution Background Modelling and Updating

*Ruijiang Luo, Liyuan Li, Irene Yu-Hua Gu*

### **Session-3: H.264 Video coding**

Date and Time: 12 December 2007, 2:00p.m.

Venue: Y5203

Session Chair: L.M. Po (City University of Hong Kong)

Towards a Stringent Bit-Rate Conformance for Frame-Layer Rate Control in H.264/AVC

*Evan Tan, Jing Chen*

A Quantized Transform-Domain Motion Estimation Technique for H.264 Secondary SP-frames

*Ki-Kit Lai, Yui-Lam Chan, Wan-Chi Siu*

Efficient Intra Mode Decision via Statistical Learning

*Chiuwan Hwang, Shang-Hong Lai*

Fast Mode Decision Algorithms for Inter/Intra Prediction in H.264 Video Coding

*Ling-Jiao Pan, Seung-Hwan Kim, Yo-Sung Ho*

A Novel Fast Motion Estimation Algorithm Based on SSIM for H.264 Video Coding

*Chun-ling Yang, Hua-xing Wang, Lai-Man Po*

### **Session-4: Video Analysis and Retrieval**

Date and Time: 12 December 2007, 4:00p.m.

Venue: Lecture Theatre 4

Session Chair: Bo Zhang (Tsinghua University, China)

Shot Boundary Detection for H.264/AVC Bitstreams with Frames Containing Multiple Types of Slices

*Sarah De Bruyne, Wesley De Neve, Davy De Schrijver, Peter Lambert, Piet Verhoeve, Rik Van de Walle*

A Lexicon-Guided LSI Method for Semantic News Video Retrieval

*Juan Cao, Sheng Tang, Jintao Li, Yongdong Zhang, Xuefeng Pan*

3D Tracking of a Soccer Ball Using Two Synchronized Cameras

*Norihiro Ishii, Itaru Kitahara, Yoshinari Kameda, Yuichi Ohta*

Object Tracking Based on Parzen Particle Filter Using Multiple Cues

*Lei Song, Rong Zhang, Zhengkai Liu, Xingxing Chen*

Random Convolution Ensembles

*Michael Mayo*

### **Session-5: Media Security and DRM**

Date and Time: 12 December 2007, 4:00p.m.

Venue: Y5203

Session Chair: Peter Hon Wah Wong (Hong Kong University of Science & Technology)

A Hybrid Content-Based Image Authentication Scheme

*Kai Chen, Xinglei Zhu, Zhishou Zhang*

Implementing DRM over Peer-to-Peer Networks with Broadcast Encryption

*Yao Zhang, Chun Yuan, Yuzhuo Zhong*

A New Video Encryption Scheme for H.264/AVC

*Yibo Fan, Jidong Wang, Takeshi Ikenaga, Yukiyasu Tsunoo, Satoshi Goto*

### **Best Paper Session**

Date and Time: 13 December 2007, 9:00a.m.

Venue: Lecture Theatre 1

Session Chair: Shi-Min Hu (Tsinghua University)

Chong-Wah Ngo (City University of Hong Kong)

Tattoo-ID: Automatic Tattoo Image Retrieval for Suspect & Victim Identification

*Anil K. Jain, Jung-Eun Lee, Rong Jin*

Auto-Annotation of Paintings using Social Annotations, Domain Ontology and Transductive Inference

*Liza Marchenko Leslie, Tat-Seng Chua, Ramesh Jain*

Value Combination Technique for Image Authentication

*Jie Zhang, Fenlin Liu, Ping Wang, Guodong Wang*

A Novel Multiple Description Approach to Predictive Video Coding

*Zhiqin Liang, Jiantao Zhou, Liwei Guo, Mengyao Ma, Oscar C. Au*

Video Multicast over Wireless Ad Hoc Networks Using Distributed Optimization

*Yifeng He, Ivan Lee, Ling Guan*

### **Session-6: Audio, Speech and Sound Processing**

Date and Time: 13 December 2007, 11:00a.m.

Venue: Lecture Theatre 4

Session Chair: Changsheng Xu (Institute For Infocomm Research, Singapore)

Acoustic Features for Estimation of Perceptual Similarity

*Yoshihiro Adachi, Shinichi Kawamoto, Shigeo Morishima, Satoshi Nakamura*

Modeling Uncertain Speech Sequences Using Type-2 Fuzzy Hidden Markov Models

*Xiao-Qin Cao, Jia Zeng, Hong Yan*

A New Adaptation Method for Speaker-Model Creation in High-Level Speaker Verification

*Shi-Xiong Zhang, Man-Wai Mak*

Dynamic Sound Rendering based on Ray-Caching

*Ken Chan, Rynson W.H. Lau, Jianmin Zhao*

Encoding Independent Sources in Spatially Squeezed Surround Audio Coding Distortion

*Bin Cheng, Christian Ritz, Ian Burnett*

### **Session-7: Digital Watermarking**

Date and Time: 13 December 2007, 11:00a.m.

Venue: Y5203

Session Chair: Kai Chen (Institute For Infocomm Research, Singapore)

Spread-spectrum Watermark by Synthesizing Texture

*Wenyu Liu, Fan Zhang, Chunxiao Liu*

Design of Secure Watermarking Scheme for Watermarking Protocol

*Bin Zhao, Lanjun Dang, Weidong Kou, Jun Zhang, Xuefei Cao*

Digital Watermarking Based on Stochastic Resonance Signal Processor

*Shuifa Sun, Sam Kwong, Bangjun Lei, Sheng Zheng*

A DWT Blind Image Watermarking Strategy with Secret Sharing

*Li Zhang, Ping-ping Zhou, Gong-bin Qian, Zhen Ji*

### **Poster Session-1: Multimedia Content Processing and Applications**

Date and Time: 13 December 2007, 2:00p.m.

Venue: Y5204

Session Chair: Feng Wang (City University of Hong Kong)

Using Enhanced Shape Distributions to Compare CAD Models

*Xin Hou, XuTang Zhang, WenJian Liu*

Wavelet-Based Salient Region Extraction

*Dong-Woei Lin, Shih-Hsuan Yang*

Color-based Text Extraction for the Image

*Jian Yi, Yuxin Peng, Jianguo Xiao*

Text Segmentation in Complex Background Based on Color and Scale Information of Character Strokes

*Weiqiang Wang, Libo Fu, Wen Gao*

A Remediable Image Authentication Scheme Based on Feature Extraction and Clustered VQ

*Chin-Chen Chang, Chih-Chiang Tsou, Yung-Chen Chou*

Segmentation of Human Body Parts in Video Frames Based on Intrinsic Distance

*Yu-Chun Lai, Hong-Yuan Mark Liao, Cheng-Chung Lin*

A Distributed Remote Rendering Method Based on Awareness Model

*Xiang-bin Shi, Jian-feng Su, Xian-min Chen, Ling Du, Fang Liu*

Signer Adaptation Based on Etyma for Large Vocabulary Chinese Sign Language Recognition

*Yu Zhou, Wen Gao, Xilin Chen, Liang-Guo Zhang, Chunli Wang*

The Photo News Flusher: A Photo-News Clustering Browser

*Tatsuya Iyota, Keiji Yanai*

### **Poster Session-2: Multimedia Communication, Watermarking and Coding**

Date and Time: 13 December 2007, 2:00p.m.

Venue: Y5205

Session Chair: Xiao Wu (City University of Hong Kong)

Bisynchronous Approach for Robust Audio Watermarking Technology

*Xiaoming Zhang, Xiong Yin*

Design and Implementation of Steganographic Speech Telephone

*Zongyuan Deng, Zhen Yang, Xi Shao, Nin Xu, Chao Wu, Haiyan Guo*

A Low Complexity Block-Based Video De-interlacing Algorithm for SIMD Processors

*Yogesh Gupta, Sriram Sethuraman*

An Efficient Video Watermarking Scheme With Luminance Differential DC Coefficient Telephone

*Yun Ye, Xinghao Jiang, Tanfeng Sun, Jianhua Li*

Real-Time Secure Multimedia Communication System Based on Chaos Telephone

*Rogelio Hasimoto-Beltrán, Edmar Mota-García*

Design of a Decentralized Video-on-Demand System with Cooperative Clients in Multicast Telephone

*King Man Ho, K.T. Lo*

Low Computing Loop Filter Using Coded Block Pattern and Quantization Index for H.264 Video Coding Telephone

*Kwon Yul Choi, Won-Seon Song, Min-Cheol Hong*

A Low Complexity Recovery Temporal Synchronization Signals Based on Local Variance Statistics Telephone

*Ta-Te Lu, Wei-Lun Hsu, Pao-Chi Chang*

Fast Normalized Cross Correlation Based on Adaptive Multilevel Winner Telephone

*Shou-Der Wei, Shang-Hong Lai*

Hierarchical Intra-mode Restriction Technique in H.264/MPEG4-AVC Video Telephone

*Donghyung Kim, Jechang Jeong*

A Fast Global Motion Estimation Method for Panoramic Video Telephone

*Jiali Zheng, Yongdong Zhang, GuangNan Ni*

## **Special Session-2: Multimedia information systems for biomedical research**

Date and Time: 13 December 2007, 4:00p.m.

Venue: Lecture Theatre 4

Session Chair: Su-Shing Chen (Chinese Academy of Sciences, China)

Multimedia-Learning in a Life Science Workflow Environment

*Carsten Ullrich, Ruimin Shen, Su-Shing Chen*

Visualization of High-Dimensional Biomedical Image

*Peter Serocka*

Moving Object Segmentation Using the Flux Tensor for Biological Video Microscopy

*Kannappan Palaniappan, Ilker Ersoy, Sumit K. Nath*

Fusion of Multimedia Information in Biomedicine

*Su-Shing Chen*

### **Session-8: Media Delivery**

Date and Time: 13 December 2007, 4:00p.m.

Venue: Y5203

Session Chair: Irwin King (Chinese University of Hong Kong)

Channel-Aware Adaptive Multi-RPS Scheme for Video Error Resilient Transmission over Wireless OFDM Channel

*Yanzhuo Ma, Yilin Chang*

An Improved Marking Mechanism for Real-Time Video over DiffServ Networks

*Lishui Chen, Guizhong Liu, Fan Zhao*

Priority Ordering and Packetization for Scalable Video Multicast with Network Coding

*Song Xiao, Hui Wang, C.-C. Jay Kuo*

Error Concealment for INTRA-frame Losses over Packet Loss

*Mengyao Ma, Oscar C. Au, Liwei Guo, Zhiqin Liang, S.-H. Gary Chan*

Information Delivery Systems for Car Passengers without Networking Capabilities

*Chun-Hsiang Huang, Po-Wei Chen, Ping-Yen Hsieh, Ja-Ling Wu*

### **Session-9: Video Communication and Systems**

Date and Time: 14 December 2007, 10:30a.m.

Venue: Lecture Theatre 4

Session Chair: Prof. Nicholas Tran (Santa Clara University, USA)

Predictable Processing of Multimedia Content, using MPEG-21 Digital Item Processing

*Chris Poppe, Frederik De Keukelaere, Saar De Zutter, Sarah De Bruyne, Wesley De Neve, Rik Van de Walle*

A Novel Pipeline Design for H.264 CABAC Decoding

*Junhao Zheng, David Wu, Don Xie, Wen Gao*

Efficient Segment based Streaming Media Transcoding Proxy for Various Types of Mobile Devices

*Yoo Hyun Park, Yongju Lee, Hagyoung Kim, Kyongsok Kim*

Distributed Streaming for Video on

*Ramesh Yerraballi, Shraddha Rumade*

Context Aware Body Area Networks for Telemedicine

*Val Jones, Hailiang Mei, Tom Broens, Ing Widya, Jan Peuscher*

### **Session-10: Video compression and processing**

Date and Time: 14 December 2007, 10:30a.m.

Venue: Y5203

Session Chair: Yui-Lam Chan (Hong Kong Polytechnic University)

M-LTW: A Fast and Efficient Non-Embedded Intra Video Codec

*Othoniel López, Miguel Martínez-Rach, Pablo Piñol, Jose Oliver, Manuel P. Malumbres*

Intra Frame Encoding Using Programmable Graphics Hardware

*Man Cheung Kung, Oscar C. Au, Peter Wong, Chun-Hung Liu*

Error Concealment Techniques for Multi-View Video Sequences

*Taeyoung Chung, Kwanwoong Song, Chang-Su Kim*

Consistent-Quality Distributed Video Coding Framework

*Geming Wu, Lifeng Sun, Feng Huang*

Laplacian Distortion Model (LDM) for Rate Control in Video Coding

*Long Xu, Xiangyang Ji, Wen Gao, Debin Zhao*

### **Session-11: Face and 3D Model Analysis**

Date and Time: 14 December 2007, 2:00p.m.

Venue: Lecture Theatre 4

Session Chair: Raymond Wong (City University of Hong Kong)

Acquiring Critical Light Points for Illumination Subspaces of Face Images by Affinity Propagation Clustering

*Senjian An, Wanquan Liu, Svetha Venkatesh*

Random Subspace Two-Dimensional PCA for Face Recognition

*Nam Nguyen, Wanquan Liu, Svetha Venkatesh*

Robust Speaking Face Identification for Video Analysis

*Yi Wu, Wei Hu, Tao Wang, Yimin Zhang, Jian Cheng, Hanqing Lu*

Incremental AAM Using Synthesized Illumination Images

*Hyung-Soo Lee, Jaewon Sung, Daijin Kim*

Content-based 3D Model Retrieval based on the Spatial Geometric Descriptor

*Dingwen Wang, Jiqi Zhang, Hau-San Wong, Yuanxiang Li*

### **Session-12: Multimedia Applications**

Date and Time: 14 December 2007, 2:00p.m.

Venue: Y5203

Session Chair: Dr. Ramesh Yerraballi (University of Texas at Arlington, USA)

A Practical Server-Side Transmission Control Method for Multi-channel DTV Streaming System

*Yuanhai Zhang, Wei Huangfu*

Using Irradiance Environment Map on GPU for Real-time Composition

*Jonghyub Kim, Yongho Hwang, Hyunki Hong*

Ranking using Multi-Features in Blog Search

*Kangmiao Liu, Guang Qiu, Jiajun Bu, Chun Chen*

Design and Analysis of a Watermarking System for Care Labels

*Benjamin Ragan-Kelley, Nicholas Tran*

Stroke Correspondence Based on Graph Matching for Detecting Stroke Production Errors in Chinese Character Handwriting

*Zhihui Hu, Howard Leung, Yun Xu*

### **Session-13: Image Indexing, Identification and Processing**

Date and Time: 14 December 2007, 4:00p.m.

Venue: Lecture Theatre 4

Session Chair: Xiangdong Zhou (Fudan University, China)

Multi-modal Multi-label Semantic Indexing of Images based on Hybrid Ensemble Learning  
*Wei Li, Maosong Sun, Christopher Habel*

Content Based Image Hashing via Wavelet and Radon Transform  
*Xin C. Guo, Dimitrios Hatzinakos*

Effective Corner Matching for Transformed Image Identification  
*Mohammad Awrangjeb, Guojun Lu*

Automatic Panel Extraction of Color Comic Images  
*Chung Ho Chan, Howard Leung, Taku Komura*

Image Quality Assessment Based on Energy of Structural Distortion  
*Jianxin Pang, Rong Zhang, Lu Lu, Zhengkai Liu*

### **Session-14: Multimedia processing**

Date and Time: 14 December 2007, 4:00p.m.

Venue: Y5203

Session Chair: S.C. Chan (Hong Kong University)

SAR Speckle Mitigation by Fusing Statistical Information from Spatial and Wavelet Domains  
Distortion  
*Kart Lim, Nishan Canagarajah, Alin Achim*

Efficient Storage and Progressive Rendering of Multi-Resolution Mesh Distortion  
*Tong-zhu Fang, Zheng Tian*

An Improved Three-Step Hierarchical Motion Estimation Algorithm and Its Cost-Effective VLSI  
Architecture Distortion  
*Hai Bing Yin, Zhe Lei Xia, Xi Zhong Lou*