

2005 Asia-Pacific Workshop on Visual Information Processing

Lecture Theatre 4, Academic Building
City University of Hong Kong

11 December 2005

3:00 – 6:00 pm, **Registration**

12 December 2005

8:30 – 9:00 am, **Registration**

9:00 – 9:15 am, **Workshop Opening Speeches**

9:15 – 10:15 am, **Keynote Paper**

Session Chair: Hong Yan

A Unified Perspective and New Results on RHT Computing, Mixture Based Learning,
and Evidence Combination for Detecting Multiple Objects

Professor Lei Xu, Chinese University of Hong Kong

10:15 – 10:30 am, **Tea/Coffee Break**

10:30 – 12:30 pm, **Session 1: Human Biometric Image Analysis**

Session Chair: Zhi-qiang Liu

- P006 Estimate Face Orientation by Fusing Multiple Visual Cues
Si-Cheng Zhang and Zhi-Qiang Liu
- P019 Face Detection Based on Skin Colour and Facial Characteristic Structure
Guan Yang, Dao-Qing Dai and Li-Dong Zhang
- P020 DSP Implementation of Real-time Automated Face Detection and Recognition System for
Portable Devices
*Colin Sim, Abbas Bigdeli, Jonathan Thomson, Maurice Leong and Hamid
Gholamhosseini*
- P038 Orientation Field Interpolation using Constrained Delaunay Triangulation
Qinzhi Zhang and Hong Yan
- P042 Age and Gender Estimation from Facial Features
Takanori Terashima, Masahiro Ueno and Hironori Oki
- P057 Learning Style and Structure of Human Behavior
Yi Wang, Zhi-Qiang Liu and Li-Zhu Zhou
- P070 Shape-Based Image Retrieval for Person Identification
H Z Li and K L Chan
- P071 Face Detection Using a Novel Template with Gaussian Mixture Model
Siu-Hong Tse, Kwok-Wai Wong and Kin-Man Lam

12:30 – 2:00 pm, **Lunch**

2:00 – 4:00 pm, **Session 2: Medical Image and Biological Data Analysis**

Session Chair: Kap Luk Chan

- P032 Cell Phase Classification Using Markov and Gaussian Mixture Models
Dat Tran and Tuan Pham
- P035 Automatic Assessment of Bronchial Dilatation in HRCT Images of the Lungs Based on a Template Matching Technique
Sata Busayarat and Tatjana Zrimec
- P037 Robust Blood Vessel Extraction on Medical Images
Suhuai Luo and Jesse S. Jin
- P043 A Spectral Method on Human Gene Prediction Using Huang Hilbert Transform and Double Curve Representations
Rong Jiang and Hong Yan
- P060 A Multi-scale and Adaptive Spatial Fuzzy Self-organizing Feature Map for MRI Image Segmentation
Jun Kong, Jingdan Zhang, Yinghua Lu and Jianzhong Wang
- P065 Joint Estimation of 3D Left Ventricular Shape and Motion from Medical Images Using Biomechanical Models
Huafeng Liu, Ling Zhuang and Pengcheng Shi
- P073 Accurate Partial Volume Estimation of MR Brain Tissues
Alan Wee-Chung Liew and Hong Yan
- P080 T2* Estimation and Tissue Classification from Multi-TE Echo Planar Imaging
Zhenghui Hu and Pengcheng Shi

4:00 – 4:15 pm, **Tea/Coffee Break**

4:15 – 6:15 pm, **Session 3: Video Processing and Motion Analysis**

Session Chair: Alan Liew

- P014 A Vision System for Providing the Blind with 3D Colour Perception of the Environment
Simon Meers and Koren Ward
- P029 Smart Cameras: A Review
David Shi and Serge Lichman
- P036 A Comparative Study of Spectral Clustering and Information-Theoretic Co-Clustering for Video Shot Categorization
Peng Wang, Zhi-Qiang Liu and Shi-Qiang Yang
- P039 Fast Video Matching Using a Compact Binary Signature
Yijun Li and Jesse S. Jin
- P050 Stain Removal in Color Motion Pictures
K. K. Wong, A. Das and M. N. Chong
- P051 Dynamically Adjusting MPEG4 Video Streams Based on Network Bandwidth
Yin-Fu Huang and Chui-Yi Chiu
- P081 Detecting Unattended Packages through Human Activity Recognition and Object Association
Sijun Lu, Jian Zhang and David Feng
- P082 Attention-Driven Object Popping-out: Matrix Representation and Efficient Algorithm
Hong Fu, Zheru Chi and Dagan Feng

7:00 pm, **Workshop Banquet**

13 December 2005

8:30 – 10:30 am, **Session 4: Image Reconstruction and Watermarking**

Session Chair: Jesse Jin

- P016 High-Resolution Image Reconstruction under Illumination Change
Getian Ye and Jian Zhang
- P021 A Novel Digital Watermark Scheme Robust to Rotation Attack
Yongli Zhang, Hideo Kuroda, Singo Hayashi, Makoto Fujimura and Hiroki Imamura
- P022 Adaptive Wavelet Denoising Based on Local Variance and Edge Analysis for Real-Time Visualization of Medical X-Ray Image
Gaoyong Luo
- P041 Weighted Sampling and Signal Reconstruction in Spline Subspaces
Wei Lin and Jun Xian
- P046 A New QIM-Based Image Watermarking Method and System
Wenming Lu, Wanqing Li, Rei Safavi-Naini and Philip Ogunbona
- P067 A Robust Watermarking Algorithm based on SVD and Neural Network
Yinghua Lu, Wei Wang, Jun Kong, Bin Lv and Yanjun Zhou
- P072 Contractive IFS for Fractal Image Compression on Spiral Architecture
Xiangjian He, Huaqing Wang, Qiang Wu and Tom Hintz
- P075 Processor Independent Automatic SIMD Vectorization for Signal Processing and Multimedia Applications
John G. Allen and Jesse S. Jin

10:30 – 10:45 am, **Tea/Coffee Break**

10:45 – 12:45 pm, **Session 5: Pattern Detection and Recognition**

Session Chair: Mao Lin Huang

- P008 Robust Object Detection with Geodesic Active Contours Incorporated with Shape Prior
Wen Fang and Kap Luk Chan
- P013 A Study on the Performance of Multiscale Error Diffusion Algorithms
Neil B. K. W. Yu, Y.H. Fung and Y. H. Chan
- P026 Producing Watermarked Halftones with Multiscale Error Diffusion Technique
Oi-Yan Yung, Ka-Chun Lui and Yuk-Hee Chan
- P027 Projective Invariant and Non-Planar Interest Points
Shaun Werkhoven and Jesse Jin
- P047 Localization/Calibration in Wireless Sensor Networks – Review
Xiang-Tian Zheng and Jesse S. Jin
- P053 Network Intrusion Detection in Covariance Feature Space
Shuyuan Jin and Daniel So Yeung
- P064 Shot Boundary Detection Based on a Multi-Step Comparison Scheme
Cheng Cai, Kin Man Lam and Zheng Tan
- P076 Stroke Extraction for Chinese Calligraphy Images
Howard Leung and Hui Kang

12:45 – 2:00 pm, **Lunch**

2:00 – 4:00 pm, **Session 6: Machine Learning Algorithms and Their Applications**

Session Chair: Xiangjian Sean He

- P011 Improving SVM-Based Content Based Image Retrieval through Dynamically Refreshed Kernel Learned with a Fast and Robust Model Selection Criterion
Yan Gao, Lei Wang, Kap Luk Chan, Wei-Yun Yau and Ping Xue
- P012 A Multi Stage Fuzzy K-Means Recognition for Chinese Materia Medica Classification

S. K. Choy and C. S. Tong

- P015 Approximate Reasoning Using Fuzzy Set as Input Applied to Coloration
Takashi Mitsuishi, Mikika Abe, Koji Saigusa, Noriya Kayaki, and Masayuki Kochizawa
- P024 Clustered Visualization for Network Intrusion Analysis
Aurangzeb Zieb Rana and Mao Lin Huang
- P028 An Integrated Approach to Classification of Rice Grain
Savaruj Naramonthon, Toshiaki Kondo and Chalje Chareonlarnopparut
- P058 A Study of Comparison between Crisp and Fuzzy Decision Tree Induction
Xi-Zhao Wang and Juan Sun
- P061 Fast Exact Cross-Validation of Least Squares Support Vector Machines
Senjian An, Wanquan Liu and Svetha Venkatesh
- P062 A Method of Optical Formula Recognition Based on Run-Length Features
Xue-Dong Tian and Ming Hu Ha

4:00 – 4:15 pm, **Tea/Coffee Break**

4:15 – 5:00 pm, **Discussions**