

IEEE International Symposium *on* Multimedia

I S M 2 0 1 4

# TECHNICAL PROGRAM

The Splendor Hotel, Taichung, Taiwan  
December 10-12, 2014

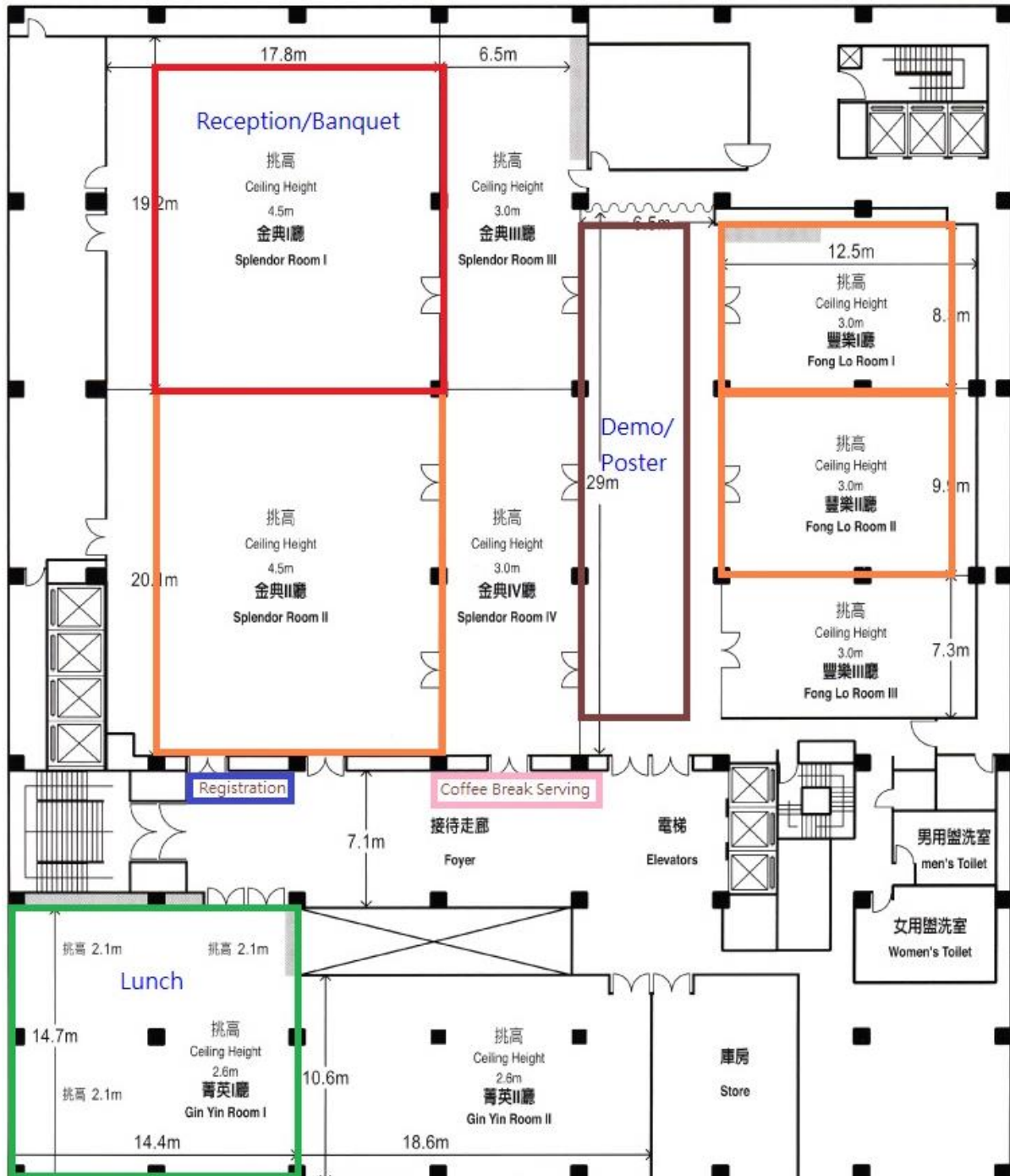
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## Floor Map of Conference Rooms



## DECEMBER 10 (WEDNESDAY)

08:30 - 17:00	Registration	Foyer in front the Splendor Room II
08:40 - 09:00	Welcome from Conference Chair Jeffrey J.P. Tsai	Splendor Room II
09:00 - 10:00	Keynote Speech (1) Speaker: Tsuhan Chen Chair: Qiong Liu	Splendor Room II
10:00 - 10:20	Coffee Break	Foyer in front the Splendor Room II
10:20 - 12:00	Parallel Sessions 1	
	ISM (1) Chair: Ichiro Ide	Splendor Room II
	ISM (2) Chair: Atsuo Yoshitaka, Xin Zeng	Fong Lo Room I
	MIPR2014 Chair: Ching-Hua Chuan	Fong Lo Room II
12:00 - 13:00	Lunch	Gin Yin Room I
13:00 - 15:30	Parallel Sessions 2	
	ISM (3) Chair: Marcio Moreno	Splendor Room II
	ISM (4) Chair: Chun-Ming Chang	Fong Lo Room I
	ISM (5) Chair: Paisarn Muneesawang	Fong Lo Room II
15:30 - 15:50	Coffee Break	Foyer in front the Splendor Room II
15:50 - 17:20	Panel Session 3 Chair: Roger Zimmermann, Phillip C.-Y. Sheu	Splendor Room II
18:00 - 21:00	Reception	Splendor Room I

## DECEMBER 11 (THURSDAY)

08:30 - 17:00	Registration	Foyer in front the Splendor Room II
09:00 - 10:00	Keynote Speech (2) Speaker: Benjamin W. Wah Chair: Max Mühlhäuser	Splendor Room II
10:00 - 10:20	Coffee Break	Foyer in front the Splendor Room II
10:20 - 12:00	Parallel Sessions 4 ISM (6) Chair: Celso Kaestner ISM (7) Chair: Xiao Wu MTEL2014 Chair: Yi-Hsuan Yang	Splendor Room II  Fong Lo Room I  Fong Lo Room II
12:00 - 13:00	Lunch	Gin Yin Room I
13:00 - 15:30	Parallel Sessions 5 ISM (8) Chairs: Mustafa Sert ISM (9) Chairs: Francesco Cricri, Håkon Stensland ISM (10) Chair: Wen-Huang Cheng	Splendor Room II  Fong Lo Room I  Fong Lo Room II
15:30 - 15:50	Coffee Break	Foyer in front the Splendor Room II
15:50 - 17:30	Session 6: Poster/Demo Chair: Chia-Han Lin	Hallway in front of Fong Lo Room
18:00 - 21:00	Banquet and Keynote Speech (3) Speaker: Max Mühlhäuser Chair: Jeffrey J.P. Tsai	Splendor Room I

## DECEMBER 12 (FRIDAY)

08:30 - 12:00	Registration	Foyer in front the Splendor Room II
09:00 - 10:00	Keynote Speech (4) Speaker: Dick Bulterman Chair: Min-Shiang Hwang	Splendor Room II
10:00 - 10:20	Coffee Break	Foyer in front the Splendor Room II
10:20 - 12:00	Parallel Sessions 7 ISM (11) Chair: Wei-Ta Chu ISM (12) Chair: Wen-Hung Liao MUSES2014 & MCR2014 Chair: Hsueh-Ting Chu	Splendor Room II  Fong Lo Room I  Fong Lo Room II

08:30 - 17:00	Registration	Foyer in front the Splendor Room II
08:40 - 09:00	Welcome from Conference Chair Jeffrey J.P. Tsai	Splendor Room II
09:00 - 10:00	Keynote (1) Referring Expressions: How to point by not pointing Tsuhan Chen, <i>Cornell University, USA</i> Chair: Qiong Liu	Splendor Room II
10:00 - 10:20	Coffee Break	Foyer in front the Splendor Room II
10:20 - 12:00	Parallel Sessions 1	

#### ISM (1): Multimedia Networking, Security, and Mobile Services

Session Chair: Ichiro Ide

Splendor Room II

Hive.js: Browser-Based Distributed Caching for Adaptive Video Streaming

*Roberto Roverso, Mikael Höggqvist*

On Unequal Power Allocation for Video Communications using Scalable Video Coding in Massive MIMO Systems

*Soo-Jin Kim, Chan-Byoung Chae, Jong-Seok Lee*

An Image Authentication and Recovery Method using Optimal Selection of Block Types

*Chun-Hung Chen, Yuan-Liang Tang, Wen-Shyong Hsieh*

Fast Selective Encryption Method for Bitmaps based on GPU Acceleration

*Han Qiu, Gerard Memmi*

#### ISM (2): Modeling, Language, Interface and Tools for Multimedia Systems

Session Chair: Atsuo Yoshitaka, Xin Zeng

Fong Lo Room I

Tagging Driven by Interactive Image Discovery: Tagging-Tracking-Learning

*Qiong Wu, Rui Gao, Xida Chen, Pierre Boulanger*

Using Multiple Interleaved Time Bases in Hypermedia Synchronization

*Marcio Moreno, Luiz Fernando Gomes Soares*

Context-dependent Viewpoint Sequence Recommendation System for  
Multi-view Video

*Xueting Wang, Yuki Muramatu, Takatsugu Hirayama, Kenji Mase*

Unsupervised Visual Domain Adaptation Using Auxiliary Information in  
Target Domain

*Masaya Okamoto, Hideki Nakayama*

### Multimedia Information Processing and Retrieval (MIPR2014)

Session Chair: Ching-Hua Chuan

Fong Lo Room II

Indexing and Retrieving Continuations in Musical Time Series Data Using  
Relational Databases

*Aleksey Charapko, Ching-Hua Chuan*

Music Genre Classification of MPEG AAC Audio Data

*Michihiro Kobayakawa, Mamoru Hoshi, Koichiro Yuzawa*

A High Performance Object Tracking Technique with an Adaptive Search  
Method in Surveillance System

*Tsung-Han Tsai, Chih-Hao Chang*

Large Area Cell Based Image Localization

*Andrew Zhai, Matthew Clements, Avideh Zakhor*

12:00 - 13:00

Lunch

Gin Yin Room I

13:00 - 15:30

Parallel Sessions 2

### ISM (3): Multimedia Applications (I)

Session Chair: Marcio Moreno

Splendor Room II

Real-time Photo Mining from the Twitter Stream: Event Photo Discovery  
and Food Photo Detection

*Keiji Yanai, Kaneko Takamu, Kawano Yoshiyuki*

Clothing Extraction using Region-based Segmentation and Pixel-level  
Refinement

*Zhao-Rui Liu, Xiao Wu, Bo Zhao, Qiang Peng*

Towards Better Land Cover Classification Using Geo-Tagged  
Photographs

*Hiroataka Oba, Masaharu Hirota, Richard Chbeir, Hiroshi Ishikawa,  
Shohei Yokoyama*



Smartphone-based Walking Speed Estimation for Stroke Mitigation

*Jeffrey Cox, Yu Cao, Guanling Chen, Jianbiao He, Degui Xiao*

Mobile App Connecting People based on Image Sentiments and Personality Detection

*Ruichi Yu, Shuguan Yang, Guifan Li, Chao Qian, Sambit Sahu, Ching-Yung Lin*

ISM (4): Image and Video Processing (I)

Session Chair: Chun-Ming Chang

Fong Lo Room I

A Measurement Method for Speed Distribution of Collective Motion with Optical Flow and its Application to Estimation of Rotation Curve

*Kei Terayama, Hirohisa Hioki, Masa-Aki Sakagami*

Human Interaction Recognition using Independent Subspace Analysis Algorithm

*Ngoc Nguyen, Atsuo Yoshitaka*

Independent Subspace of Dynamic Gabor Features for Facial Expression Classification

*Prarinya Siritanawan, Kazunori Kotani*

Scene Duplicate Detection from News Videos Using Image-Audio Matching Focusing on Human Faces

*Haruka Kumagai, Keisuke Doman, Ichiro Ide, Daisuke Deguchi, Hiroshi Murase*

Fast Object Detection Using Multistage Particle Window Deformable Part Model

*Wei-Ta Chu, Ming-Hung Hsu*

ISM (5): Audio Processing

Session Chair: Paisarn Muneesawang

Fong Lo Room II

Bridging Music via Sound Effects

*Yin-Tzu Lin, Chuan-Lung Lee, Jyh-Shing Jang, Ja-Ling Wu*

A Novel Fundamental Frequency Estimator Based on Harmonic Pattern Match for Music Signals

*Li Luo, Guido H. Bruck, Peter Jung*

Correcting Chord Classification Errors based on Tonal Organization  
Information of Classical Music

*Wang Kong Lam, Tan Lee*

Speech/Music Classification of Short Audio Segments

*Toni Hirvonen*

Efficient Recognition of Human Emotional States from Audio Signals

*Ernur Sonat Erdem, Mustafa Sert*

15:30 - 15:50	Coffee Break	Foyer in front the Splendor Room II
15:50 - 17:20	Panel Session 3: Multimedia Big Data Chairs: Roger Zimmermann, Phillip C.-Y. Sheu Panelists: Ichiro Ide, <i>Nagoya University</i> Håkon Kvale Stensland, <i>University of Oslo</i> Robert Mertens, <i>Hochschule Weserbergland</i> Homer H. Chen, <i>National Taiwan University</i>	Splendor Room II
18:00 - 21:00	Reception	Splendor Room I

08:30 - 17:00	Registration	Foyer in front the Splendor Room II
09:00 - 10:00	Keynote (2)	Splendor Room II
	Just Noticeable Differences—Optimizing the Perceptual Quality of Real-Time Multimedia Systems over the Internet	
	Benjamin W. Wah, <i>The Chinese University of Hong Kong, Hong Kong</i>	
	Chair: Max Mühlhäuser	
10:00 - 10:20	Coffee Break	Foyer in front the Splendor Room II
10:20 - 12:00	Parallel Sessions 4	

## ISM (6): Industry Session

Session Chair: Celso Kaestner

Splendor Room II

MPEG Media Transport (MMT) for 3D Tele-Immersion Systems

*Karthik Venkatraman, Shanthi Vellingiri, Balakrishnan Prabhakaran, Nhut Nguyen*

Composite Search for Distributed Multimedia Recorded Meetings

*Shimei Pan, Mercan Topkara*

Predicting Affective Emotions in Video

*Joe Ellis, Sabrina Lin, Shih-Fu Chang, Ching-Yung Lin*

Salient Event Detection in Basketball Mobile Videos

*Francesco Cricri, Sujeet Mate, Igor Curcio, Moncef Gabbouj*

## ISM (7): Visualization, Computer Graphics, and Virtual Reality

Session Chair: Xiao Wu

Fong Lo Room I

An Advanced Computational Intelligence System for Training of Ballet Dance in a Cave Virtual Reality Environment

*Guoyu Sun, Paisarn Muneesawang, Matthew Kyan, Haiyen Li, Ling Zhong, Nang Dong, Bruce Elder, Ling Guan*

An Extracting Method for Individual Building Wall Points from Mobile Mapping System Data

*Xin Zeng, Shunsuke Araki, Ken'ichi Kakizaki*

An Immersive Telepresence System using a Real-Time Omnidirectional Camera and a Virtual Reality Head-Mounted Display

*Luis Gaemperle, Kerem Seyid, Vladan Popovic, Yusuf Leblebici*

3D Sketch System based on Life-sized and Operable Concept Enhanced  
by Three Design Spaces

*Shun'Ichi Tano*

Multimedia Technologies in E-Learning (MTEL2014)

Session Chair: Yi-Hsuan Yang

Fong Lo Room II

Architecture Considerations for Spaced Repetition Based Mobile Learning  
Games on iOS

*Florian Schimanke, Robert Mertens, Oliver Vornberger*

Learning Analytics in Linked Open Online Courses

*Kai Michael Höver, Max Mühlhäuser*

Evaluating a Linked Open Online Course

*Kai Michael Höver, Max Mühlhäuser*

Graphical Programming Environments for Educational Robots: Open  
Roberta - Yet another One?

*Beate Jost, Markus Ketterl, Reinhard Budde, Thorsten Leimbach*

12:00 - 13:00

Lunch

Gin Yin Room I

13:00 - 15:30

Parallel Sessions 5

ISM (8): Multimedia Applications (II)

Session Chair: Mustafa Sert

Splendor Room II

Muvee: An Alternative Approach to Mobile Video Trimming

*Roman Ganhör*

Music Driven Human Motion Manipulation for Characters in a Video

*Che-Hua Yeh, Yi-Hsuan Yang, Ming-Hsu Chang, Mark Liao*

Dealing with Noisy Data on Point Cloud Models

*Yi-Peng Lin, Kuo-Wei Hsu*

Towards a Semantic Multi-facet Description of Audiovisual Documents

*Manel Fourati, Anis Jedidi, Faiez Gargouri*

Automatic Segmentation of Audio Signals for Bird Species Identification

*Thiago L. F. Evangelista, Thales M. Priolli, Carlos N. Silla Jr., Bruno A. Angelico, Celso A. A. Kaestner*

## ISM (9): Image and Video Processing (II)

Session Chair: Francesco Cricri, Håkon Stensland

Fong Lo Room I

Seam Carving for Color-plus-Depth 3D Image

*Wei-Cih Jhou, Yu-Hsun Lin, Ja-Ling Wu*

Block-based Salient Region Detection using a New Spatial-spectral-domain Contrast Measure

*Nan Mu, Xin Xu, Li Chen, Jing Tian*

Contour Completion of Partly Occluded Skew-Symmetry Objects

*Takahiro Hayashi, Motoki Sasaki*

Feature Description Using Center-Symmetric Extended Local Ternary Patterns

*Wen-Hung Liao, Chia-Yu Liu, Ming-Ching Lin*

Objective Quality Comparison of 4K UHD and Up-scaled 4K UHD Videos

*Manri Cheon, Jong-Seok Lee*

An Evaluation of Debayering Algorithms on GPU for Real-time Panoramic Video Recording

*Ragnar Langseth, Vamsidhar Reddy Gaddam, Håkon Stensland, Pål Halvorsen, Carsten Griwodz*

## ISM (10): Multimedia Database and Information Retrieval

Session Chair: Wen-Huang Cheng

Fong Lo Room II

Negative Relevance Feedback for Improving Retrieval in Large-scale Image Collections

*Abir Gallas, Walid Barhoumi, Ezzeddine Zagrouba*

Predicting Occupation from Single Facial Images

*Wei-Ta Chu, Chih-Hao Chiu*

KS-SIFT: a keyframe extraction method based on local features

*Tamires Barbieri, Rudinei Goularte*

Cineast: A Multi-Feature Sketch-Based Video Retrieval Engine

*Luca Rossetto, Ivan Giangreco, Heiko Schuldt*

Indexing Motion Detection Data for Surveillance Video

*Søren Vind, Philip Bille, Inge Li Gørtz*

The Batch Mode Active Learning for Interactive Image Retrieval  
*Ngo Truong Giang, Ngo Quoc Tao, Nguyen Duc Dung, Nguyen Trong*

15:30 - 15:50 Coffee Break Foyer in front the Splendor Room II

15:50 - 17:30 Session 6: Poster/Demo Sessions

#### Poster Session

Session Chair: Chia-Han Lin Hallway in front of Fong Lo Room

Utilization of NASA-TLX for Workload Evaluation of Gaze-Writing Systems

*Takahiro Hayashi, Reo Kishi*

Haptic-driven Visual Playback

*Yongyao Yan, Greg S. Ruthenbeck, Karen J. Reynolds*

Braille for Visual Cryptography

*Guangyu Wang, Feng Liu, W. Yan*

Personalized Music Emotion Recognition using Electroencephalography (EEG)

*Jia-Lien Hsu, Yan-Lin Zhen, Tzu-Chieh Lin, Yi-Shiuan Chiu*

Adaptive Spatial Resolution Selection for Stereoscopic Video Compression with MV-HEVC: a Frequency Based Approach

*Payman Aflaki, Miska Hannuksela, Moncef Gabbouj*

#### Demo Session

Session Chair: Chia-Han Lin Hallway in front of Fong Lo Room

Multi-modal Interaction System for Smart TV Environments

*Injae Lee, Jihun Cha, Ohseok Kwon*

A Fast-Adjusting Rate Control Algorithm Using Network-Assisted Scheme for HD Video Streaming

*Abbas Javadtalab, Xiaoqing Zhu, Shervin Shirmohammadi*

18:00 - 21:00 Banquet and Keynote (3) Splendor Room I

Multimedia Goes Big Data: Trends and Challenges

*Max Mühlhäuser, Technische Universität Darmstadt, Germany*

Chair: Jeffrey J.P. Tsai

08:30 - 12:00	Registration	Foyer in front the Splendor Room II
09:00 - 10:00	Keynote (4) A Reflection on 20 Years of Media Editing and Narrative Development Dick Bulterman, <i>FX Palo Alto Laboratory, USA</i> Chair: Min-Shiang Hwang	Splendor Room II
10:00 - 10:20	Coffee Break	Foyer in front the Splendor Room II
10:20 - 12:00	Parallel Sessions 7	

## ISM (11): Multimedia Applications (III)

Session Chair: Wei-Ta Chu

Splendor Room II

Quantifying and Improving User Quality of Experience in Immersive Tele-Rehabilitation

*Karthik Venkatraman, Suraj Raghuraman, Yuan Tian, Balakrishnan Prabhakaran, Klara Nahrstedt, Thiru Annaswamy*

Variable Markov Oracle: A Novel Sequential Data Points Clustering Algorithm with Application to 3D Gesture Query-Matching

*Cheng-I Wang, Shlomo Dubnov*

A Visual Evaluation Framework for In-Home Physical Rehabilitation

*Naimul Mefraz Khan, Stephen Lin, Ling Guan, Baining Guo*

Using a Commodity Hardware Video Encoder for Interactive Video Streaming

*Martin Alexander Wilhelmsen, Håkon Stensland, Vamsidhar Reddy Gaddam, Asgeir Mortensen, Ragnar Langseth, Carsten Griwodz, Pål Halvorsen*

## ISM (12): Image and Video Processing (III)

Session Chair: Wen-Hung Liao

Fong Lo Room I

Integrating Spatial Information into Inverted Index for Large-Scale Image Retrieval

*Bien-Van Nguyen, Duy Pham, Thanh Duc Ngo, Duy-Dinh Le, Anh Duc Duong*

Towards Fast Multimedia Feature Extraction: Hadoop or Storm

*David Mera, Michal Batko, Pavel Zezula*

When Specular Object meets RGB-D Camera 3D Scanning: Color Image plus Fragmented Depth Map

*Shun-Xuan Wang, Yu-Hsun Lin, Ja-Ling Wu*

Hand-Crafted Features or Machine Learnt Features? Together They Improve RGB-D Object Recognition

*Lu Jin, Shenghua Gao, Zechao Li, Jinhui Tang*

Multimedia and Sensory Environment Services (MUSES2014)

Multimedia Computing Research (MCR2014)

Session Chair: Hsueh-Ting Chu

Fong Lo Room II

A lightweight Secure Data Aggregation Technique for Wireless Sensor Network

*Sk. Md. Mizanur Rahman, Mohammad Anwar Hossain, Maqsood Mahmud, Muhammad Imran Chaudry, Ahmad Almogren, Mohammed Alnuem, Atif Alamri*

Anonymous and Secure Communication Protocol for Cognitive Radio Ad Hoc Networks

*Sk. Md. Mizanur Rahman, S. M. Kamruzzaman, Ahmad Almogren, Abdulhameed Alelaiwi, Atif Alamri, Abdullah Alghamdi*

Investigating Cascaded Face Quality Assessment for Practical Face Recognition System

*Hyung-Il Kim, Seung Ho Lee, Yong Man Ro*