

Proceedings of  
2015 International Workshop on Vision,  
Communications and Circuits  
(IWVCC 2015)

Keio University, Yokohama, Japan  
October 31 – November 3, 2015

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# Greeting Message

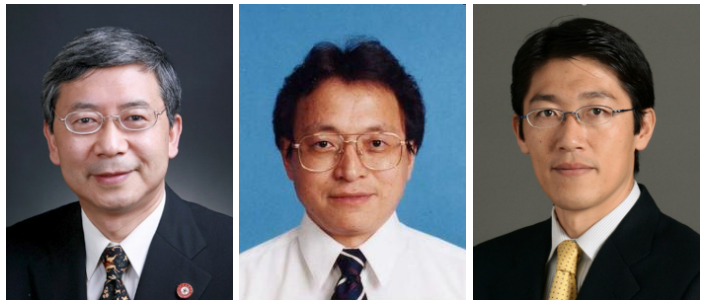
Welcome Message from General Co-Chairs

It is our great pleasure to welcome you to International Workshop on Vision, Communications and Circuits (IWVCC) 2015, which will be held October 31-November 3, 2015, at Keio university in Yokohama, Japan.

IWVCC 2015 is sponsored by National Natural Science Foundation of China (NSFC) and organized by IWVCC organizing committee, Keio university, and Xian Jiaotong University. IWVCC has been the forum for researchers and engineers related to Keio university and Xian Jiaotong University to present and discuss vision, communications, and circuits, while opening the door to everyone at the same time.

A diverse range of topics from vision, communications to circuits is featured in the conference, which will lead to new technologies, sciences, and industries.

We believe that IWVCC 2015 will provide you with a valuable opportunity to share ideas on an international basis with other participating researchers and engineers from around the world. We thank you for your support of IWVCC and your attendance, and wish you a pleasant experience in IWVCC2015.



Nanning Zheng (Xi'an Jiaotong University, China)  
Fuji Ren (Tokushima University, Japan)  
Tomoaki Ohtsuki (Keio University, Japan)  
General Co-Chairs of IWVCC'15

## Workshop Committee

General Co-Chairs	Nanning Zheng (Xi'an Jiaotong University, China) Fuji Ren (Tokushima University, Japan) Tomoaki Ohtsuki (Keio University, Japan)
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General Secretaries	Yasue Mitsukura (Keio University, Japan) Jingmin Xin (Xi'an Jiaotong University, China) Yoshifumi Nishio (Tokushima University, Japan)

# Schedule

## October 31

Time	Events
18:30-20:30	Welcome Reception

## November 1

Time	Events
10:00-10:15	Opening Ceremony
10:15-11:00	Keynote Speech 1
11:00-11:45	Keynote Speech 2
Lunch Time	
13:30-16:42	Oral Sessions
18:00-20:00	Banquet Dinner

## November 2

Time	Events
09:30-11:00	Oral Sessions
11:15-12:00	Keynote Speech 3
Lunch Time	
13:30-16:30	Lab. Visits

## November 3

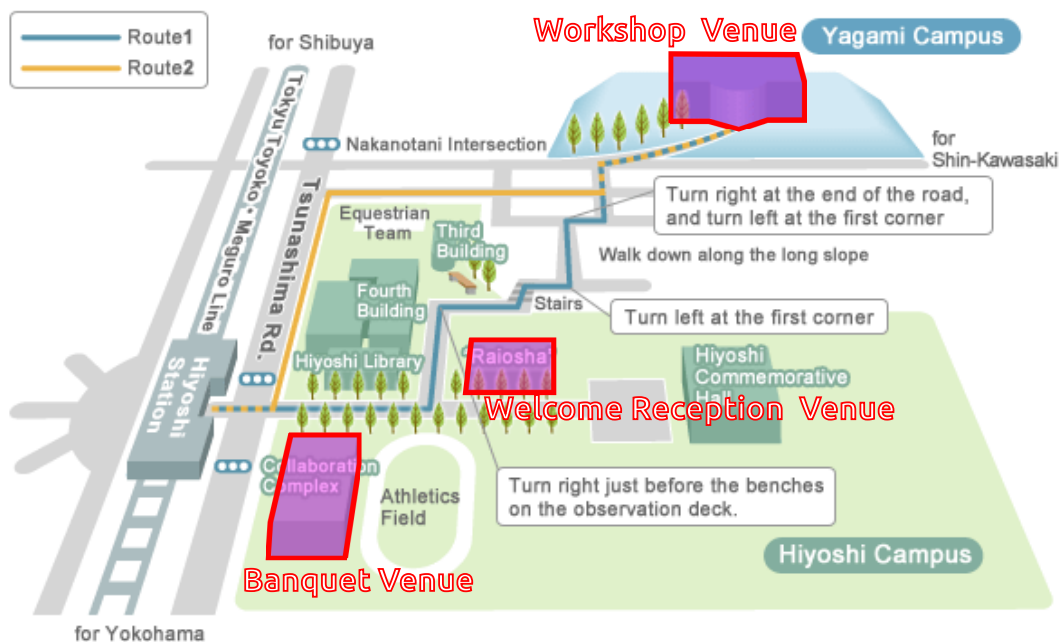
10:00-17:00	Excursion
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# General Information

## Workshop Information

### Map around the Venue

- Workshop Venue
  - 2BF 14th Building: "Sosokan", Yagami Campus, Keio University, 3-14-1 Hiyoshi, Kohoku-ku, Yokohama, Kanagawa 223-8522, Japan
- Welcome Reception Venue
  - Faculty Lounge, 1F Raiosha, Hiyoshi Campus, Keio University 4-1-1 Hiyoshi, Kohoku-ku, Yokohama, Kanagawa 223-8521, Japan
- Banquet Venue
  - Queen ALICE, 2F Collaboration Complex: "Kyosei-kan", Hiyoshi Campus, Keio University, 4-1-1 Hiyoshi, Kohoku-ku, Yokohama, Kanagawa 223-8526, Japan



### Campus Map (Yagami Campus)



# Advance Program

## 01AM1 : Keynote Speech 1

Date: November 1, 10:15-11:00  
Place: Room A, Keio University  
Chair: Iwao Sasase (Keio University)

### 01AM1-1 **Digital Communications over Fast Fading Channels**

1

P. Takis Mathiopoulos (University of Athens)

## 01AM2 : Keynote Speech 2

Date: November 1, 11:00-11:45  
Place: Room A, Keio University  
Chair: Yoko Uwate (Tokushima University)

### 01AM2-1 **Computational Intelligence Approaches in 3D Integrated Circuit Design**

2

Maciej J. Ogorzalek (Jagiellonian University)

## 01PM1-1 : Pattern Recognition

Date: November 1, 13:30-15:00  
Place: Room A, Keio University  
Chair: Yuehu Liu (Xian Jiaotong University)

### 01PM1-1-1 **Double-Channel Deep Denoising Auto-Encoder for Facial Expression Recognition**

3

Lele Cheng (Xi'an Jiaotong University), Xiaoyu Tao (Xi'an Jiaotong University), Jinjun Wang (Xi'an Jiaotong University), Yihong Gong (Xi'an Jiaotong University)

### 01PM1-1-2 **Sparse Coding Based on Group-Sparsity Dictionary for Image Classification**

7

Weiwei Shi (Xi'an Jiaotong University), Jinjun Wang (Xi'an Jiaotong University), Yihong Gong (Xi'an Jiaotong University)

### 01PM1-1-3 **Robustness and Preference of Saccade Patterns in Face Recognition**

11

Yaohui Han (Xi'an Jiaotong University), Badong Chen (Xi'an Jiaotong University), Nanning Zheng (Xi'an Jiaotong University)

### 01PM1-1-4 **Weed Seeds Recognition via Support Vector Machine and Random Forest**

15

Cheng Cai (Northwest A&F University), Yilin Long (Northwest A&F University)

01PM1-1-5	<b>Learning Fine-Grained Deep Ranking Network for Image Retrieval</b>	19
Binbing Liao (Zhejiang University), Siliang Tang (Zhejiang University), Jian Shao (Zhejiang University), Jun Xiao (Zhejiang University), Fei Wu (Zhejiang University)		

## 01PM1-2 : Communication Systems 1

Date: November 1, 13:30-15:00  
 Place: Room B, Keio University  
 Chair: Shigeki Shiokawa (Kanagawa Institute of Technology)

01PM1-2-1	<b>A Complexity-Reduced Joint Maximum Likelihood Detection for NOMA/MIMO Systems</b>	23
Gouki Iwasaki (Chiba Institute of Technology), Takahiko Saba (Chiba Institute of Technology), Yukitoshi Sanada (Keio University)		

01PM1-2-2	<b>Performance of DOA Estimation Using Temporal Spatial Virtual Array</b>	27
Hirotaka Hayashi (Keio University), Tomoaki Ohtsuki (Keio University)		

01PM1-2-3	<b>I2V-VLC Vehicle Motion Modeling Using Actual Vehicle Vibration</b>	31
Masayuki Kinoshita (Nagoya University), Takaya Yamazato (Nagoya University), Hiraku Okada (Nagoya University), Toshiaki Fujii (Nagoya University), Shintaro Arai (National Institute of Technology, Kagawa College), Tomohiro Yendo (Nagaoka University of Technology), Koji Kamakura (Chiba Institute of Technology)		

01PM1-2-4	<b>Resolution-Scalable Motion Vector Coding Using Prediction between Adjacent Resolutions</b>	35
Xiangwei Li (Xi'an Jiaotong University), Xuguang Lan (Xi'an Jiaotong University), Meng Yang (Xi'an Jiaotong University), Jianru Xue (Xi'an Jiaotong University)		

01PM1-2-5	<b>Fast Binary Code Generation using Hadamard Matrix for Convolutional Network Hashing</b>	39
Jin Li (Xi'an Jiaotong University), Xuguang Lan (Xi'an Jiaotong University), Hao Feng (Xi'an Jiaotong University), Guoqiang Liang (Xi'an Jiaotong University), Meng Yang (Xi'an Jiaotong University), Nanning Zheng (Xi'an Jiaotong University)		

## 01PM2-1 : Computer Vision

Date: November 1, 15:30-16:42  
 Place: Room B, Keio University  
 Chair: Xuguang Lan (Xian Jiaotong University)

01PM2-1-1	<b>Evaluation of Task Performance for Unmanned Vehicle</b>	43
Pei Niu (Xi'an Jiaotong University), Yuehu Liu (Xi'an Jiaotong University)		

01PM2-1-2	<b>Human Height Measurement from Videos based on Coordinate Transformation</b>	47
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01PM2-1-4	<b>Video Beautification via Face</b>	55
Wang Yuan (Xi'an Jiaotong University), Qiqi Hou (Xi'an Jiaotong University), Jinjun Wang (Xi'an Jiaotong University)		

## 01PM2-2 : Communication Systems 2

Date: November 1, 15:30-16:42

Place: Room B, Keio University

Chair: Takahiko Saba (Chiba Institute of Technology)

01PM2-2-1	<b>Superimposed SPIT Fraud Prevention with Semi-Supervised Call Pattern Analysis</b>	59
Kentaro Toyoda (Keio University), Iwao Sasase (Keio University)		
01PM2-2-2	<b>Performance Evaluation of Path Metrics for Lower Throughput Fluctuation in Wireless Mesh Networks</b>	63
Hiromu Asahina (Keio University), Hisao Yamamoto (Tokyo City University), Iwao Sasase (Keio University)		
01PM2-2-3	<b>Performance Evaluation of Stochastic Resonance Receiver for Dynamical and Non-Dynamical Devices in QPSK Modulation</b>	67
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Yuma Furuya (Tokyo University of Science), Gou Hosoya (Tokyo University of Science), Hiroyuki Yashima (Tokyo University of Science)		

## 02AM1-1 : Machine Learning

Date: November 2, 09:30-11:00

Place: Room A, Keio University

Chair: Takaya Yamazato (Nagoya University)

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Mamoru Tanaka (Sophia University)

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Date: November 2, 09:30-11:00

Place: Room B, Keio University

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Place: Room A, Keio University

Chair: Yoshifumi Nishio (Tokushima University)

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