

The 2017 World Congress on Information Technology Applications and Services

**"Advanced Mobile, Communications, Security,
Multimedia, Vehicular, Cloud, IoT, and Computing"**

February 14-16, 2017
Jeju, Korea

Organized by

World IT Congress & KIPS SWRG



2017 International Conferences
(Sponsored / Technically Sponsored by KIPS / KIPS SWRG)

The 11th International Conference on Multimedia and Ubiquitous Engineering (MUE2017)

- May, 22-24, 2017, Guilin, China
- <http://www.mue-conference.org/2017>

The 12th International Conference on Future Information Technology (FutureTech2017)

- May, 22-24, 2017, Guilin, China
- <http://www.futuretech-conference.org/2017>

The 2017 International Conference on Big data, IoT, and Cloud computing (BIC 2017) (The UCAWSN conference name has been changed.)

- Aug. 22-24, 2017, Jeju, Korea
- <http://www.bic-conference.org>

The 9th International Conference on Computer Science and its Applications (CSA 2017)

- December, 18-20, 2017, Taichung, Taiwan
- <http://www.csa-conference.org/2017>

The 12th KIPS International Conference on Ubiquitous Information Technologies and Applications (CUTE 2017)

- December, 18-20, 2017, Taichung, Taiwan
- <http://www.cute-conference.org/2017>

Message from the World IT Congress 2017 General Chairs

The 2017 World Congress on Information Technology Applications and Services "Advanced Mobile, Communications, Security, Multimedia, Vehicular, Cloud, IoT, and Computing" will be held in Jeju, Korea on Feb 14~16, 2017. The World IT Congress 2017 Jeju is aimed at address key themes on "Advanced Mobile, Communications, Security, Multimedia, Vehicular, Cloud, IoT, and Computing". World IT 2017 will be the most comprehensive conference focused on Information Technology, computing, and applications, and will provide an opportunity for academic and industry professionals to discuss the latest issues and progress in the area of Advances in IT, Applications, and Services (AITA). In addition, the conference will publish high quality papers which are closely related to the various theories and practical applications in advanced IT. Furthermore, we expect that the conference and its publications will be a trigger for further related research and technology improvements in this important subject.

Accepted and presented papers highlight new trends and challenges of Computer Science and its Applications. The presenters showed how new research could lead to novel and innovative applications. We hope you will find these results useful and inspiring for your future research.

We would like to express our sincere thanks to Steering Committee: James J. (Jong Hyuk) Park (SeoulTech, Korea), Hamid R. Arabnia(The University of Georgia, USA), Han-Chieh Chao (National Ilan University, Taiwan), Yi Pan (Georgia State University, USA), Jianhua Ma (Hosei University, Japan), Young-Sik Jeong (Dongguk University, Korea), Hojjat Adeli (The Ohio State University, USA), Ramjee Prasad (Aalborg University, Denmark), Qun Jin (Waseda University, Japan). Our special thanks go to the Program Chairs, all Program Committee members and all the additional reviewers for their valuable efforts in the review process, which helped us to guarantee the highest quality of the selected papers for the conference.

We cordially thank all the authors for their valuable contributions and the other participants of this conference. The conference would not have been possible without their support. Thanks are also due to the many experts who contributed to making the event a success.

World IT Congress 2017
General Chairs

Gangman Yi, Dongguk University, Korea
Wanlei Zhou, Deakin University, Australia
Hwa Young Jeong, Kyung Hee University, Korea
Nazim Agoulmine, University of Evry, France

Message from the World IT Congress 2017 Program Chairs

Welcome to the 2017 World Congress on Information Technology Applications and Services "Advanced Mobile, Communications, Security, Multimedia, Vehicular, Cloud, IoT, and Computing" which will be held in Jeju, Korea on Feb 14~16, 2017. This congress will be the most comprehensive conference focused on the various aspects of Advances in IT, Applications, and Services (AITA).

The World IT 2017 provides an opportunity for academic and industry professionals to discuss the latest issues and progress in the area of Computer Science. In addition, the conference contains high quality papers which are closely related to the various theories and practical applications in Computer Science. Furthermore, we expect that the conference and its publications will be a trigger for further related research and technology improvements in this important subject. The World IT 2017 contains high quality research papers submitted by researchers from all over the world. Each submitted paper was peer-reviewed by reviewers who are experts in the subject area of the paper. Based on the review results, the Program Committee accepted papers.

For organizing an International Conference, the support and help of many people is needed. First, we would like to thank all authors for submitting their papers. We also appreciate the support from program committee members and reviewers who carried out the most difficult work of carefully evaluating the submitted papers.

We would like to give my special thanks to James J. (Jong Hyuk) Park (SeoulTech, Korea), Hamid R. Arabnia(The University of Georgia, USA), Han-Chieh Chao (National Ilan University, Taiwan), Yi Pan (Georgia State University, USA), Jianhua Ma (Hosei University, Japan), Young-Sik Jeong (Dongguk University, Korea), Hojjat Adeli (The Ohio State University, USA), Ramjee Prasad (Aalborg University, Denmark), Qun Jin (Waseda University, Japan) as the Steering Committee of World IT for their strong encouragement and guidance to organize the conference. We would like to thank World IT 2017 General Chairs for their advices to make possible organization of The World IT 2017. We would like to express special thanks to execute members for their timely unlimited support.

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Guschinsky Nikolai, Byelorussian National Academy of Sciences, Belarus

Invited Speaker



Constructing LoRaWAN Network (Public vs. Private)

Kwang-il Hwang, Ph.D.

Professor,

Dept. of Embedded Systems Engineering,

College of Information Technology

Incheon National University, Incheon, Korea

Abstract

Low-Power Wide-Area Network (LPWAN) or (LPWA) is a type of wireless telecommunication network designed to allow long range communications at a low bit rate among things (connected objects), such as sensors operated on a battery. The characteristics of extremely long communication range and low power provide more feasible, reasonable wireless connectivity with a lot of researchers, field engineers, and application designers, who have suffered from weak wireless connectivity, range limitations, and energy efficiency. Therefore, in this keynote, key applications and challenges of LPWA will be handled first, and several existing (emerging) new LPWA standards will be discussed. In particular, LoRaWAN, which is regarded as one of the most effective LPWA solutions, is mainly focused. So, several functionalities and characteristics of LoRaWAN will be presented. In addition, network architecture different from legacy short range wireless communications such as IEEE 802.15.4, IEEE 802.11, etc., will be overviewed and state-of-the-art off-the-shelf LoRa chipsets and modules will be introduced. Then, in order to help understand how to develop LoRaWAN application, our LoRaWAN experiments will be presented. At the end of the keynote, design considerations of LoRaWAN application and network, and several types of design methodologies will be discussed.

Biography

Dr. Hwang is an associate professor, in the department of embedded systems engineering, Incheon National University, Korea, and he is also a director of Leotek Advanced Research Center (LARC) at INU. He has received MS. and Ph.D. in Electronics and Computer Engineering from Korea University, Seoul, Korea, 2004 and 2007, respectively. He worked as an assistant professor at the dept. of Computer Control Engineering, Incheon City University, Incheon, Korea, 2007 – 2010. Since 2010, he has been with the department of Embedded Systems Engineering, College of Information Technology, Incheon National University, Korea, where he is currently an associate professor. He has worked as an advisory director of K-one information telecommunication co. ltd., 2006 ~ 2009, he was a vice chair of World Embedded Software Contest 2013, and he was a committee member of ICT standard Map, TTA. Based on embedded networked system design expert skills, his research is focused on fault-tolerable system, energy-efficient system, and network-oriented IoT application design. For the last 10 years, he performed more than 30 research projects granted by government and collaborated with several companies. He also has a number of published papers and patents: more than 100 published papers and more than 20 patents. In addition, he received Best paper awards from several domestic and international conferences, outstanding INU research awards, 2011 and 2014, and he also gained the honor, World 100 educators, in CE engineering, 2009, IBC. Since 2014, he has joined JIPS (Journal of Information Processing and Systems) editorial board, where he is currently an associate editor, and he has acted as an organizing member in a number of international conferences hosted by KIPS CSWRG. He is also a member of IEEE, KICS, KMMS, KIPS, and KISS.

PROGRAM SCHEDULE FOR WOLRD IT CONGRESS 2017

Day 1, Feb. 14, 2017				
Time	Min	HALL -A	HALL B	HALL C
08:40-09:00	20	Registration		
09:00-10:30	90	Session A-1 Chair : JongBeom Lim	Session B-1 Chair : Guang-Ho Cha	Session C-1 HCC 2017 Chair : Kyoungsu Oh
10:30-10:40	10	Coffee Break		
10:40-12:00	80	Session A-2 Chair : Hyungjoo Kim	Session B-2 Chair : Young-Giu Jung	Session C-2 Chair : Joonseok Park
12:00-13:10	70	Lunch		
13:10-14:00	50	Keynote: Constructing LoRaWAN Network Kwang-il Hwang, Ph.D. Professor at Incheon National University, Korea Chair: Joon-Min Gil		
14:00-14:10	10	Coffee Break		
14:10-15:30	80	Session A-3 Chair : Jun-Ho Huh	Session B-3 Chair : Wanhyun Cho	Session C-3 Chair : Koojoo Kwon
15:30-15:40	10	Coffee Break		
15:40-17:00	80	Session A-4 Chair : Dongkyun Kim	Session B-4 Chair : Joon-Min Gil	Session C-4 Chair : ByungWook Kim
18:00-		Banquet (HALL B)		

Day 2, Feb. 15, 2017		
Time	Min	HALL -A
10:00-12:00	120	Session A-5 Chair : Sangkee Suk
13:00-15:00	120	Organizing Committee Meeting (Only for Invited Members)
16:00-17:30	90	Local Arrangement Committee Meeting (Only for Invited Members)

Day 3, Feb. 16, 2017		
Time	Min	HALL -A
10:00-12:00	120	Session A-6 Chair : Seokhong Min
13:00-15:00	120	Executive Meeting - Organized by World IT 2017 (Only for Invited Members)
16:00-17:30	90	Organizing Committee Meeting II (Only for Invited Members)

1. A paper presentation should be made by one of authors of the paper for 20 minute.
(10 minutes for the presentation itself and 5 minutes for Q/A)
2. All speakers of each session should meet the session chair at their room 10 minutes before the session begins.
3. Windows 7 laptops running the Adobe Reader and Microsoft Office for paper presentations will be prepared. Please prepare for your presentation.

**DETAILED SCHEDULE FOR
THE 2017 WORLD CONGRESS ON
INFORMATION TECHNOLOGY, APPLICATIONS
AND SERVICES**

(WORLD IT CONGRESS 2017)

Day 1, Feb. 14, 2017 (Tuesday)

08:40-09:00 Registration

**09:00-10:30 Session A-1 World-IT 2017
(HALL A)
(Chair: JongBeom Lim)**

- 1. A Study on the Quantitative Design and Documentation for the VR based Training Contents Realism**
Gyungchang Lee, Kyoil Chung, Cheong Youn
- 2. Mobility Robustness Optimization Algorithm for Conflicting Types of Handover Failures in LTE Systems**
Hongsoog Kim, Sangchul Oh and Jeehyeon Na
- 3. A Task Scheduling Technique Based on Ant Colony Optimization in Cloud Computing Environments**
YoungJu Moon, HeonChang Yu, JoonMin Gil, JongBeom Lim
- 4. Empirical Analysis on Preemptible Kernel and Shielding on Multi-core Embedded System**
Donghwan Son, Byeongho Gim, Donghyouk Lim, Hoon Choi
- 5. Ambient Intelligence Middleware based on Awareness-Cognition Framework**
Svetlana Kim and Yong-Ik Yoon
- 6. Inferring the repeat region at de novo assembler with repeat modeling application**
Jaehee Jung, Gangman Yi

**09:00-10:30 Session B-1 World-IT 2017
(HALL B)
(Chair: Guang-Ho Cha)**

- 1. A Case Study on How to Predict Cafe Profit: A Dimension Reduction via Factor Analysis**
Jeong-Hyeon Moon, Chae-Young Yun, Seon-Joo Park, Kyung-Ah Sohn
- 2. Indexing and Search for a Large Fuzzy Database**
Guang-Ho Cha
- 3. Side-Channel Attack for Simple Secure Pairing in Bluetooth**
Chang-o Eun, Jaegeun Moon, Im Y. Jung

4. **Pattern Aware Hybrid Main Memory Management System**
Xian-Shu Li, Su-Kyung Yoon, Shin-Dug Kim
5. **Development of test agents for automated dynamic testing of UNIWAY**
Seoung-Hyeon Lee, Jung-Chan Na
6. **Content-based Image Retrieval Using Texture Features Extracted from Local Energy and Local Correlation of Gabor Transformed Images**
Heehyung Bu, , Namchul Kim, Baehoo Lee, Sungho Kim

09:00-10:30 Session C-1 Human Computer Cooperation - HCC 2017
(HALL C)
(Chair: Kyoungsu Oh)

1. **Progressive Motion Artifact Removal in PPG Signal for Accurate Heart Rate Estimation**
Ji Hun An, Heemang Song and Hyun-Chool Shin
2. **Body-area and Skeleton Matching for Climber Motion Recognition**
Jungsoo Kim, Daniel Chung, Ilju Ko
3. **An Out-of-Core Segmentation for Large Scale Images Dataset using Commercial Image Editing Tool**
Koojoo Kwon, Byeong-Seok Shin
4. **AR-based Sportainment System by Two-way Interaction**
Bokyung Sung, Sunhee Weon, Junhyoung Park, Green Bang, Daniel Chung, Ilju Ko
5. **Real-time Global Illumination Algorithm Based On Mobility of Objects**
Jinhyung Choi, Bo-Zhang, Kyoungsu Oh, Haoxu Zheng
6. **Motion Blurred Shadows using a Hybrid Approach**
MinhPhuoc Hong, Kyoungsu Oh
7. **Location Tracking Device Using Efficient Sensor Deployment Strategy**
Byeong-Seok Shin
8. **Electronic Signature Authentication System Using Segmental Units Comparisons and Bag of Word Technique**
Jun-Ho Huh, Kyungryong Seo
9. **Efficient Video Quality Assessment for live video Transcoding based on Intensity Metric and Analysis**
Hyoungseok Kim, Joonseok Park
10. **Human Action Recognition Using Reproducing Kernel Hilbert Space for Product Matrix Manifold and K-NN**
Wanhyun Cho, Sangkyoon Kim, Soonyoung Park

10:30-10:40 Coffee break

10:40-12:00 Session A-2 World-IT 2017
(HALL A)
(Chair: Hyungjoo Kim)

1. **Design of Test Methods for Evaluating Energy Dynamics in IT-Enabled Energy Storage System**
Young Gon Kim, Dong Hoon Kim, Eun-Kyu Lee
2. **A Prediction Short-term Wind Power Generation using Feature Vector Extraction of Wind Direction and Wind Speed**
Namrye Son, Yeonju Kim

3. Parallel Processing for a Pig Monitoring System

Yunchang Choi, Jinseong Kim, Jaehak Kim, Yeonwoo Chung, Yongwha Chung, Daihee Park

4. Suggestion SSL-VPN for Traffic Signal Control System

Hansaem Wi, Chan-Kuk Jang, Jae-Hoon Lee, Okyeon Yi

5. A Novel Structure Tensor Using Nonlocal Total Variation Operator

Yin Yu, Kai Ma, Yuhui Zheng, Jin Wang

6. Questions classification with attention machine

Yunlu Liaozheng, Jin Liu, Jin Wang

10:40-12:00 Session B-2 World-IT 2017

(HALL B)

(Chair: Young-Giu Jung)

1. A Study on the Improvement of Public Application through Survey

EunJoo Kim, SangHun Lee, and PillJung Kim

2. A Study on the Design of the system for Security Risk Assessment of the works for Prevention of Money Laundering at Financial Institutes

PillJung Kim, EunJoo Kim, KyoungHwa Do

3. A Soft Set-based Mobile Cloud Services Recommendation

Fei Hao, Doo-Soon Park, Hyung-Seok Seo

4. Design of ECG Data Compression Algorithm for Efficient M2M-based Mass Biometric Data Transmission

Jae-Sung Shim, Seung-Su Yang, Young-Hwan Jang, Yong-Wan Ju, Seok-Cheon Park

5. Context based Multiple Players Identification in sports images

MiYoung Nam, Jun-Young Lee, Sung Youb Kim, YoungGiu Jung

6. Development of Extended-STIL Compiler for AC/DC Instrument Test and Verification

Hayoon Yi, Yunheung Paek, Kwangman Ko, Seongjin Kim

10:40-12:00 Session C-2 World-IT 2017

(HALL C)

(Chair: Joonseok Park)

1. Design of Genetic Algorithm-based Task Allocation Model for Efficient Maintenance Service

Seung-Su Yang, Jae-Sung Shim, Young-Hwan Jang, Yong-Wan Ju, Seok-Cheon Park

2. Design of Clustering Algorithm for Efficient Energy Management in Wireless Sensor Network Environments

Seung-Su Yang, Jae-Sung Shim, Young-Hwan Jang, Yong-Wan Ju, Seok-Cheon Park

3. Design of a Framework for Security Enhancement in Telematics Control Units (TCUs)

Kiyoung Jang, Suhong Shin, Byoungsoo Koh

4. IoT Device Security based on Proxy Re-encryption

SuHyun Kim, ImYeong Lee

5. Improvement of Verified Neighbor Discovery Protocol based on Directional Antenna to Detect Wormhole in Underwater Acoustic Sensor Networks

Seung-Jun Lee, DongHyun Shin, Changhwa Kim

6. ECDH-based 3PAKE Protocol for Secure Smart Home Service

Dae-Hwi Lee, Im-Yeong Lee

12:00-13:10 Lunch break

13:10-14:00 Keynote Speech

(HALL A)

(Chair: Joon-Min Gil)

“Constructing LoRaWAN Network”

Kwang-il Hwang, Ph.D.

Professor at Incheon National University, Korea

14:00-14:10 Coffee break

14:10-15:30 Session A-3 World-IT 2017

(HALL A)

(Chair: Jun-Ho Huh)

- 1. Improved Data Stream Clustering Algorithm for Anomaly Detection**
Chunhyong Yin, Sun Zhang, Jin Wang, Jeong-Uk Kim
- 2. Application of an Improved Data Stream Clustering Algorithm in Intrusion Detection System**
Chunhyong Yin, Lian Xia, Jin Wang, Hye-jin Kim
- 3. Short Text Classification Technology Based on KNN+Hierarchy SVM**
Chunhyong Yin, Lingfeng Shi, Jin Wang, Jeong-Uk Kim
- 4. An Improved Routing Protocol based on Visit History of Nodes in Opportunistic Delay Tolerant Networks**
Jae Hoo Namgung, Min Wook Kang and Yun Won Chung
- 5. Spectral Response based Regularization Parameter Selection for Total Variation Image Restoration**
Y.H. Zheng, M. Li, K. Ma, S. F. Wang and J. Wang
- 6. Face Recognition for Mobile Self-Authentication with Online Model Update**
Seon Ho Oh, Geon Woo Kim

14:10-15:30 Session B-3 World-IT 2017

(HALL B)

(Chair: Wanhyun Cho)

- 1. Deep Feature Learning for Large-Scale Person Re-identification**
Seon Ho Oh, Seung Wan Han, Beom Seok Choi, Geon Woo Kim, Kyung Soo Lim
- 2. Prototype System Design for Large-Scale Person Re-identification**
Seon Ho Oh, Seung Wan Han, Beom Seok Choi, Geon Woo Kim
- 3. Automatic Multiple 2D Barcodes Localization in Complex Scenes**
Myeongsuk Pak, Sanghoon Kim
- 4. Topic Modeling for Learner Question & Answer Analytics**
Kyungro Kim, Hye jin Song and Nammee Moon
- 5. Deep Belief Networks based Radar Signal Classification System**
Chang-Min Jeong, YoungGiu Jung
- 6. A Study of the Factors Influencing Information Security Policy Compliance**
Gwangil Ju, Jinhyung Park, Wanyoung Heo, HarkSoo Park

14:10-15:30 Session C-3 World-IT 2017

(HALL C)



(Chair: Koojoo Kwon)

1. **Prediction of the Food Supply for Beef Cattle using Regression analysis**
Saraswathi Sivamani, Vasanth Ragu, Saravana Kumar Venkatesan, Changsun Shin, Jangwoo Park, Yongyun Cho
2. **A Model of Energy-Awareness Predictor to improve the Energy Efficiency**
Svetlana Kim and Yong-Ik Yoon
3. **Gaussian mixture model based image denoising method with local constraints**
M.Li, Y.H. Zheng, S. F. Wang and J. Wang
4. **DRM Market System for Cloud-based Media Service Platform**
Dueckyoung Cho, Seogchan Hwang, Gunho Jeong
5. **Art Painting Identification Using Selective Search and GoogLeNet**
Yiyu Hong, Jongweon Kim
6. **Design and Proposal of Security Service in Portable Electric Vehicle Charging Infrastructure**
Chan-Kuk Jang, Hansaem Wi, Jae-Hoon Lee, Okyeon Yi

15:30-15:40 Coffee break

15:40-17:00 Session A-4 World-IT 2017
(HALL A)

(Chair: Dongkyun Kim)

1. **Virtual Convergence Network Environment based on Software-Defined Wide Area Network**
Dongkyun Kim, Yong-Hwan Kim, Ki-Hyun Kim, Joo-Beom Kim, Gi-Seong You, Joon-Min Gil
2. **System Structure Design for Safe Patch Distribution**
JunHee Kim, SangMoon Jung, YooJae Won
3. **Consumption Behavior Recommendation System through Moving patterns and Emotional Analysis**
Jinah Kim, Sunmin Lee, Kyungrog Kim, Nammee Moon
4. **Combined SVD based Wavelet Transform and Local Binary Pattern Features for Image Retrieval**
DaYou Jiang, Jongweon Kim
5. **Art Painting Detection and Tracking in TV media**
Ruichen Jin, Jongweon Kim

15:40-17:00 Session B-4 World-IT 2017
(HALL B)

(Chair: Joon-Min Gil)

1. **Proposal of Piecewise key management design considering capability of underwater communication nodes**
Hyunki Kim, Jaehoon Lee, Okyeon Yi
2. **3D Model Retrieval Using Light Source Difference Image**
Sungjun Han, Jongweon Kim
3. **Proposal for Evaluation of Public Information System Project Pricing Adequacy in Lowest-Bidding Systems**
Seunghee Kim
4. **A Study on Secure Protocol Techniques Supporting TCUs in a Telematics Environment**

Byoungsoo Koh, Suhong Shin

5. Design of Low Complexity PHY for Close Proximity Communication at 60 GHz Band

Jae Seung Lee, Young-Hoon Kim, Hoo Sung Lee and Moon-Sik Lee

15:40-17:00 Session C-4 World-IT 2017

(HALL C)

(Chair: ByungWook Kim)

1. Multi-Step Prediction for Time Series with Factor Mining and Neural Network

Mingji Zhou, Jin Liu, Fei Li, Jin Wang, Chunyong Yin, Hye-jin Kim

2. A Vision-Based Approach for Deep Web Form Extraction

Jiachen Pu, Jin Liu, Jin Wang, Chunyong Yin, Hye-jin Kim

3. Analysis of Time Data for Intelligent Services Based on IoT Environments

Vasanth Ragu, Saraswathi Sivamani, Myeongbae Lee, Hyunwook Cho, Yongyun Cho, Jangwoo Park, Changsun Shin

4. Neural Network based Radar Signal Classification System using Probability Moment and ApEn

Chang Min Jeong, Young Gyu Jung

5. Intelligent Docking System of Drone and Ground Vehicles using Image Sensor Fusion

Jong-Hwan Beck, Hee-Su Park, Se-Ryeong Oh, Ji-Hun Shin, Sang-Hoon Kim

18:00- Banquet [HALL-B]

Day 2, Feb. 15, 2017 (Wednesday)

10:00-12:00 Session A-5 World-IT 2017

(HALL A)

(Chair: Sangkee Suk)

1. ISO/IEC 27017:2015 of Using ISO/IEC 27002:2013

Taekjung Kim, Moon-Seog Jun, Jungho Kang

2. Secret Web Browser Structural Designs for Web Service Capsulation in Mobile Environment

Changhyun Oh, Jungho Kang, SangKee Suk, Moon-Seog Jun

3. Study on JWT for User Authentication and Access API in Smart Home Environment

Namsu Hong, Moon-Seog Jun, Jungho Kang

4. Design and Performance Evaluation of Joint Routing and Scheduling for Maximizing Network Utilization of Data Center Networks

Seokhong Min, Jungho Kang and Jonguk Kong

5. Safe-driving aid system using bi-directional cameras

Byoung Wook Kwon, Kyung Yeob Park, Seo Yeon Moon, Jong Hyuk Park

6. Telling Computer and Human Apart : Image-Sound Based CAPTCHA System

Jung Hyun Ryu, Nam Yong Kim, Seo Yeon Moon, Jong Hyuk Park

13:00-15:00 Organizing Committee Meeting I

16:00-17:30 Local Arrangement Committee Meeting



Day 3, Feb. 16, 2017 (Thursday)

10:00-12:00 Session A-6 World-IT 2017

(HALL A)

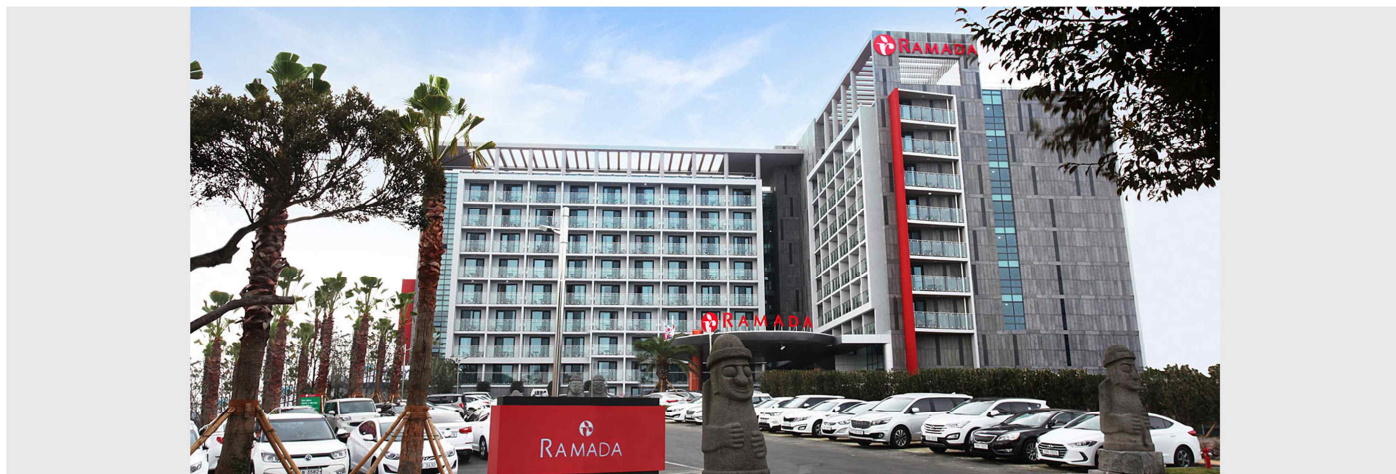
(Chair: Seokhong Min)

- 1. Multi-channel transmission method for guaranteeing TCP reliability and improving transmission rate in UNIWAY**
Yong-Kyun Kim, Seoung-Hyeon Lee, Jung-Chan Na, Kyung-Soo Lim
- 2. Development of Unidirectional Security Gateway satisfying Security Functional Requirements**
Seon-Gyoung Sohn, Jungchan Na and Kyung-Soo Lim
- 3. A Proposal for Data Collection using Portable Evidence Container in Guest Domain based on Mobile Hypervisor**
Kyung-Soo Lim, Young-Giu Jung, Jeong-Nyeo Kim
- 4. Novel method for estimating the repeat region on de novo assembly**
Jaehee Jung, Gangman Yi
- 5. High Level Gateway Design Approach for Standalone LoRaWAN**
Kwang-il Hwang
- 6. Development and evaluation of entropy-based clustering validity index**
ByoungWook Kim, JaMee Kim, JaeHwa Chung, WonGyu Lee

13:00-15:00 Executive Meeting - Organized by World IT 2017

16:00-17:30 Organizing Committee Meeting II

Conference Venue



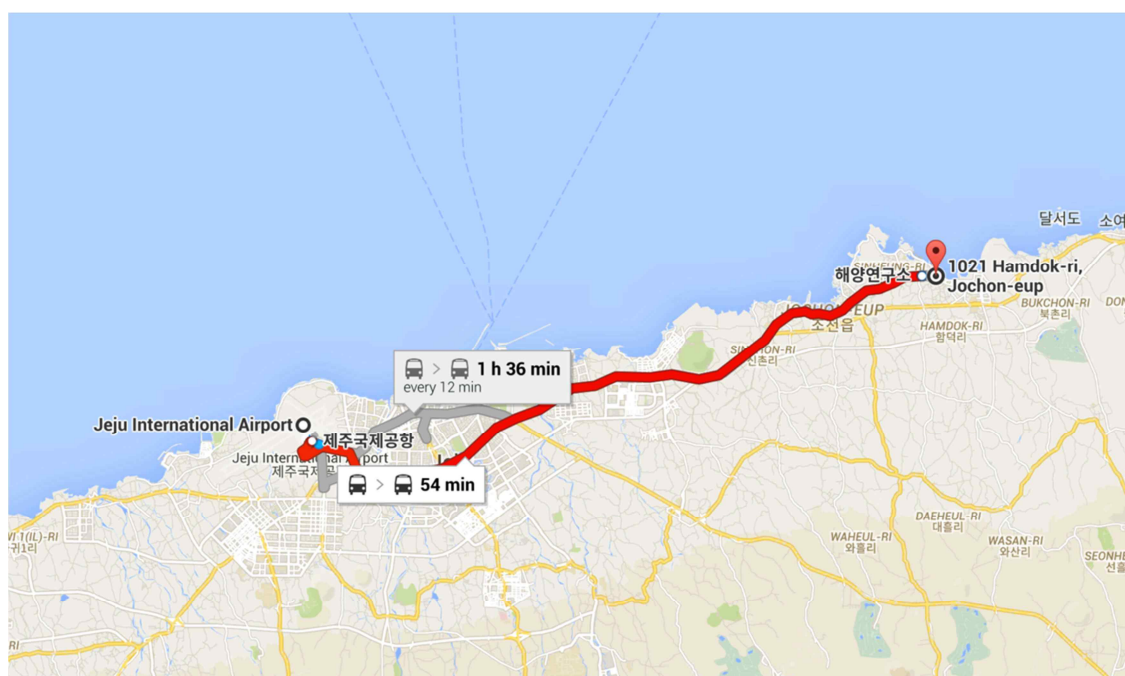
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MUE/FutureTech 2017

May 22-24, 2017, Guilin, China



■ Introduction

The new multimedia solutions and ubiquitous computing environments facilitate the seamless integration of diverse kinds of intelligent devices based on multiple modalities into interoperable multimedia frameworks. These key technologies of multimedia solutions and ubiquitous computing environments interact and collaborate with each other in increasingly effective ways across a wide spectrum of consumer, business, healthcare, education, and governmental domains.

This conference provides an opportunity for academic and industry professionals to discuss recent progress in the area of multimedia and ubiquitous environment including models and systems, new directions, novel applications associated with the utilization and acceptance of ubiquitous computing devices and systems.

■ Paper Submission Due

Round II

Submission Due: **March 30, 2017**

Author Notification: April 15, 2017

Registration Due: April 25, 2017

Camera Ready Due: April 30, 2017

Conference Date: May 22-24, 2017

Post-proceeding in LNEE

■ Publication & Special Issue

All accepted papers will be included in the conference proceedings as one of **Lecture Notes in Electrical Engineering (LNEE) series published by Springer** (indexed by EI & SCOPUS).

Distinguished papers accepted and presented in MUE / FutureTech 2017, after further revisions, will be published in the **special issues of the international journals indexed by SCI/E**.



