

# ICTC2017 Final Program (Technical Paper Sessions)

October 18 (Wednesday), 2017

## [Session I-1] Advanced Wireless & Mobile Communication Systems and Infrastructure 1

Oct. 18, 09:00-10:40

Chair: Prof. JungRyun Lee (Chung-Ang University, Korea)

### I-1.1 Secure Channel for Molecular Communications

*S. M. Riazul Islam (Sejong University, Korea); Farman Ali (Inha University, Korea); Hyeonjoon Moon (Sejong University, Korea); Kyung Sup Kwak (Inha University, Korea)*

### I-1.2 Signal Transmission Method for Measurement Used in Handover of Control and Non-Payload Communication of Unmanned Aerial Vehicle

*Tae Chul Hong, Kunseok Kang, Kwangjae Lim, Byoung-Sun Lee and Jae Young Ahn (ETRI, Korea)*

### I-1.3 Implementation of PHY Rate and A-MPDU Length Adaptation Algorithm on WiSHFUL Framework

*Changmok Yang and Seongho Byeon (Seoul National University, Korea); Peter Ruckebusch, Spilios Giannoulis and Ingrid Moerman (Ghent University & IMEC, Belgium); Sunghyun Choi (Seoul National University, Korea)*

### I-1.4 A Study on the Sensor Network Authentication by Utilizing a Brownian Motion Behavior

*Minh H.T, Nguyen L.T, Tra N.T and Hai H.D (Posts and Telecommunications Institute of Technology, Vietnam)*

### I-1.5 Long Channel Multipath Shortening using Statistical Selection Rake Receiver

*Chung Gwo Chin, Mohamad Yusoff Alias, Tiang Jun Jiat and Gan Ming Tao (Multimedia University, Malaysia)*

## [Session I-2] Internet of Things (IoT), Internet of Everything (IoE), Web of Objects (WoO) 1

Oct. 18, 09:00-10:40

Chair: Prof. Tokumi Yokohira (Okayama University, Japan)

### I-2.1 Multi-Leveling for Higher Capacity of Wi-Fi Backscatter Communications

*Wisnu Murti and Ji-Hoon Yun (Seoul National University of Science and Technology, Korea); Jae-Han Lim (Kwangwoon University); Byung Jang Jeong, Woo Jin Byun (ETRI, Korea)*

### I-2.2 Efficient Router Node Deployment for ZigBee based Internet of Things Network using Physarum Optimization Algorithm

*Lukman Rosyidi, Muhamad Asvial and Riri Fitri Sari (University of Indonesia, Indonesia)*

### I-2.3 A Framework to Support Data Interoperability in Web Objects based IoT Environments

*Muhammad Golam Kibria, Sajjad Ali, Muhammad Aslam Jarwar and Il Young Chong (Hankuk University of Foreign Studies, Korea)*

### I-2.4 CoAP over BLE-GATT for OCF

*Changbae Yoon, Hyungjun Choi, Jaehyun Cho and Young Woong Kim (Software Research and Development Center, Samsung Electronics Company, Ltd., Korea)*

### I-2.5 Analysis on Network Performance of Container Virtualization on IoT Devices

*Kyunghoon Lee, Hyunjin Kim, Beomsu Kim and Chuck Yoo (Korea University, Korea)*

## [Session I-3] u-Healthcare Systems, and Bio-informatics & Its Applications

Oct. 18, 09:00-10:40

Chair: Prof. Sangho Choe (The Catholic University of Korea)

### I-3.1 Brownian-Motion-based Molecular Communication Network using Quorum Sensing Mechanism

*Ponsuge Tissera and Sangho Choe (The Catholic University of Korea)*

### I-3.2 A Comprehensive Adaptive Filter to Eliminate Baseline Wander from ECG Signals

*MD Saifur Rahman, Chulhyung Choi, Young-pil Kim and Sikyung Kim (Kongju National University, Korea)*

### I-3.3 Comparative Coevolutionary Analysis between Zika Virus and Dengue Virus

*Jinhwa Jang (KISTI, Korea) and Se-Eun Bae (Samsung Genome Institute, Korea)*

### I-3.4 An Improved Brain Tumor Detection and Classification Mechanism

*Sagar Kumar Shil, Farzana Parvin Polly and Mohammad Arif Hossain (East Delta University, Bangladesh); Mohammad Shareef Ifthekhar (Kookmin University, Korea); Mohammed Nazim Uddin (East Delta University, Bangladesh); Yeong Min Jang (Kookmin University, Korea)*

### I-3.5 Epidemic Simulation of H1N1 Influenza Virus using GIS in South Korea

*Jooyeon Park (UST, Korea), Jinhwa Jang and Insung Ahn (KISTI, Korea)*

## [Session I-4] Smart Grid and Energy/Power-Aware Technologies & Applications

Oct. 18, 09:00-10:40

Chair: Dr. Venkata Mani Vakamulla (NIT Warangal, India)

### I-4.1 Review of Trends on ICT Convergence in Electric Industry

*Chankook Park, Daeyoun Lee and Hyun Lee (KEEI, Korea); Yangsoo Kim (National Disaster Management Research Institute, Korea)*

**I-4.2 Controlling Energy Consumption with the World-Wide Adaptive Thermostat using Fuzzy Inference System in Smart Grid**

*Sakeena Javaid and Nadeem Javaid (COMSATS Institute of Information Technology, Islamabad, Pakistan); Sohail Iqbal (National University of Sciences and Technology (NUST), Islamabad, Pakistan); Muhammad Junaid Mughal (COMSATS Institute of Information Technology, Islamabad, Pakistan)*

**I-4.3 Estimation of Energy Self-Sufficiency Rate by EMS Simulation using SPICE**

*Yuta Oshima, Iwao Mizumoto and Hiroshi Oguma (National Institute of Technology, Toyama College, Japan); Noboru Ishihara and Kazuya Masu (Tokyo Institute of Technology, Japan)*

**I-4.4 An Enhanced Spider Web Chart Method for Climate Change Risk Quantification in Electrical Facilities**

*Sangjin Jeong, Hyunjoo Kang and Yoon-Young An (ETRI, Korea)*

## [Session I-5] Big Data and Smart Computing

Oct. 18, 09:00-10:40

Chair: Prof. Yong Jin (Tokyo Institute of Technology, Japan)

**I-5.1 An Adaptive SLA-based Data Flow Mechanism for Stream Processing Engines**

*Muhammad Hanif, Hyungduk Yoon, Sungrim Jang and Choonhwa Lee (Hanyang University, Korea)*

**I-5.2 Efficient Detection of Suspicious DNS Traffic by Resolver Separation per Application Program**

*Yong Jin (Tokyo Institute of Technology, Japan); Kunitaka Kakoi (Tokyo University of Agriculture and Technology, Japan); Masahiko Tomoishi (Tokyo Institute of Technology, Japan); Nariyoshi Yamai (Tokyo University of Agriculture and Technology, Japan)*

**I-5.3 Chaotic Dynamical Systems based Image Encryption Model**

*Manish Kumar, Sunil Kumar, Mrinal kanti Das and Sanjeev Singh (University of Delhi, India); Rajat Budhiraja (Aricent Technologies (H). Ltd., India)*

**I-5.4 A Subspace Method for solving Unconstrained Optimization Problems without Derivatives**

*Yimeng Zhang and Zuguo He (Beijing University of Posts and Telecommunications, P.R. China)*

**I-5.5 A Dynamic Service Allocation Algorithm in Mobile Edge Computing**

*Bo HU, Jianye Chen and Fengcun Li (Beijing University of Posts and Telecommunications, P.R. China)*

## [Session P-1] Poster Session 1

Oct. 18, 09:00-10:40

Chair: Prof. Mohamad Yusoff (Multimedia University, Malaysia), Prof. Jinho Choi (GIST, Korea)

**P-1.1 Survey of Indoor Optical Camera Communication (OCC) systems for the Internet of Lights**

*Thanh Luan Vu, Trang Nguyen (Kookmin University, Korea), Chun Soo Kim, Eun Bi Sin, Jeonghwa Jeong (LightTelecom Company), Yeong Min Jang (Kookmin University, Korea)*

**P-1.2 Compact GCM Implementations on 32-bit ARMv7-A Processors**

*Hwajung Seo (Hansung University, Korea); Taehwan Park, Garam Lee and Howon Kim (Pusan National University, Korea)*

**P-1.3 A Web-based Service Deployment Method to Edge Devices in Smart Factory Exploiting Docker**

*Jihun Ha, Jungyong Kim, Heewon Park, Jaehong Lee, Hyuna Jo, Heejung Kim and Jaeheon Jang (Samsung Electronics, Korea)*

**P-1.4 Policy-based Clustering Service for Network Function Virtualization over Multi-site Clouds**

*Kim Bao Long, Truong-Xuan Do and YoungHan Kim (Soongsil University, Korea)*

**P-1.5 Bimodal Flooding Scheme for Mitigating Contention and Redundancy in Relayed Broadcast**

*Youngboo Kim and Eun-Chan Park (Dongguk University, Korea)*

**P-1.6 Line-Break Prediction of Hanmun Text using Recurrent Neural Networks**

*Dong Hoon Oh, Zahra Shah and Gil-Jin Jang (Kyungpook National University, Korea)*

**P-1.7 Long-Term Prediction of Vehicle Trajectory based on a Deep Neural Network**

*Donggi Jeong, Minjin Baek and Sang-Sun Lee (Hanyang University, Korea)*

**P-1.8 An Analysis System of Pedestrian-Vehicle Interaction Risk Level using Drone Videos**

*Jeong Ah Jang and Hyun Mi Lee (Ajou University, TOD-based Engineering Research Center)*

**P-1.9 Joint NOMA Beamforming and User Scheduling for Sum Rate Maximization in a Full-Duplex System**

*Hieu V. Nguyen, Van-Dinh Nguyen and Oh-Soon Shin (Soongsil University, Korea)*

**P-1.10 Cell Selection Technique for 5G Millimeter-Wave Cellular Systems**

*Mohammed Saquib Khan, Sung Joon Maeng and Yong Soo Cho (Chung-Ang University, Korea)*

**P-1.11 Hierarchical Multicast Transmission for Single Cell Point-to-Multipoint(SC-PTM) in Cellular Networks**

*Doyle Kwon, Jae Hyun Park and Duk Kyung Kim (Inha University, Korea)*

**P-1.12 Diversification of ICT Suppliers for Technological Convergence: An Evolutionary Perspective on Technological Changes in Automotive Industry**

*Kyung Sun Ham (KETI, Korea); Jung Hoon Lee and Jae Won Jung (Yonsei University, Korea)*

**P-1.13 LTE based V2X Receiver to Support High Speed**

- Jin-Yup Hwang, Manyoung Jung and Sang-Wook Lee (LG Electronics, Korea)*
- P-1.14 Near-field Magnetic MIMO Communication for Implantable Devices using Scalable Non-coupling Coil Array**  
*Han-Joon Kim, Jaeseok Lee and Ji-Woong Choi (DGIST, Korea)*
- P-1.15 Integration of Transtheoretical Model with Wellness Big Data for Healthy Behavior Assessment to Adoption**  
*Hafiz Syed Muhammad Bilal and Sungyoung Lee (Kyung Hee University, Korea)*
- P-1.16 Cylindric 3D Force Sensor using a Flexible MCNTs/PDMS Composite Material**  
*Sang Jun Moon (Ulsan National Institute of Science and Technology, Korea); Hyun-Woo Oh, Wang Joo Lee and Jae Doo Huh (ETRI, Korea)*
- P-1.17 A Study on Machine Learning Web Service using Spreadsheets**  
*Chi-Yurl Yoon (University of Science and Technology, Korea) and Shin-Gak Kang (ETRI, Korea)*
- P-1.18 Optical Fiber Line Monitoring using a Handheld Line Information Reader in Optical Communications**  
*Jaeyul Lee (Kyungpook National University, Korea); Hyungwoo Kwon (TDI Co. Ltd., Korea); Jaewon Song, Mansik Jeon and Jeehyun Kim (Kyungpook National University, Korea)*
- P-1.19 Performance Analysis of the Key Aspects Affecting Capacity of 4G LTE Networks**  
*Igor Kim, Jungsun Um and Seungkeun Park (ETRI, Korea)*
- P-1.20 CTMAC: A Cooperative TDMA MAC in Vehicular Ad Hoc Networks**  
*Yeo-Hoon Yoon and Young-Bae Ko (Ajou University, Korea)*
- P-1.21 A Method for Reducing Garbage Collection Overhead of SSD Using Machine Learning Algorithms**  
*Jung Kyu Park (Seoul Women's University, Korea); Jaeho Kim (UNIST, Korea)*
- P-1.22 Secure Framework for Information Sharing and Management in a Distributed Design Environment**  
*Jeongtae Kim and Soyoung Park (ETRI, Korea)*
- P-1.23 Intelligent Operation Monitoring IoT Tag for Factory Legacy Device**  
*Hyonyoung Han, Hyuncheol Kang and Jiyon Son (ETRI, Korea)*
- P-1.24 A Detail Enhancement Strategy for Face Sketch Synthesis based on NSST**  
*Weiguo Wan and Hyo Jong Lee (Chonbuk National University, Korea)*
- P-1.25 Designing a Robust Network based on Network Degree Information**  
*Insoo Sohn (Dongguk University, Korea)*
- P-1.26 A Study on the Discovering ATSC 3.0 Services Using DNS**  
*Bongho Lee, Kyutae Yang, Sung-Ik Park, Namho Hur and Heung Mook Kim (ETRI, Korea)*
- P-1.27 Emergency-Alert Services Framework Using Common Alert Protocol through Cable Set-Top Box**  
*Eunjung Kwon, Hyunho Park, Eui-Suk Jung and Yong-Tae Lee (ETRI, Korea)*
- P-1.28 Image Denoising Method based on Directional Total Variation Filtering**  
*Abdul Wahid and Hyo Jong Lee (Chonbuk National University, Korea)*
- P-1.29 Object Detection with Sliding Window in Images Including Multiple Similar Objects**  
*Jinsu Lee (University of Science and Technology & ETRI, Korea); Junseong Bang and Seong-Il Yang (ETRI, Korea)*
- P-1.30 A Fast Content Delivery Mechanism using the CCN and Enhanced Base Stations**  
*Nazib Abdun Nasir and Seong-Ho Jeong (Hankuk University of Foreign Studies, Korea)*
- P-1.31 Energy Management based on Communication of Smart Plugs and Inverter for Smart Home Systems**  
*Sewan Heo, Wan-Ki Park and Il-Woo Lee (ETRI, Korea)*
- P-1.32 Peer-to-Peer based Energy Trading System for Heterogeneous Small-scale DERs**  
*Yoon-Sik Yoo, Taein Hwang and Shinyuk Kang (ETRI, Korea); Shah Hasan Shah Newaz (Universiti Teknologi Brunei(UTB), Brunei Darussalam); Il-Woo Lee (ETRI, Korea); Jun Kyun Choi (KAIST, Korea)*
- P-1.33 A Study on Location Information Aided Re-identification in CCTV Environment**  
*Sungwon Byon, Eunjung Kwon, Eui-Suk Jung and Yong-Tae Lee (ETRI, Korea)*
- P-1.34 Indoor Positioning using Wi-Fi Fingerprint with Signal Clustering**  
*Chorong Park and Seung Hyong Rhee (University of Kwangju, Korea)*
- P-1.35 A Novel SDN Multicast for Large-scale IoT Environments**  
*Hyeong-su Kim, Seongjin Yun, Hanjin Kim and Won-Tae Kim (Koreatech University, Korea)*
- P-1.36 SDNbox: A Portable Open-Source Testbed for SDN Study**  
*Nhu-Ngoc Dao (Chung-Ang University, Korea); Quang Dieu Tran (Yeungnam University & Vietnam Academy of Science and Technology, Korea); Minhoo Park (Soongsil University, Korea); Sungrae Cho (Chung-Ang University, Korea)*
- P-1.37 SDN-based Network Security Functions for Effective DDoS Attack Mitigation**  
*Daeyoung Hyun, JinYong Kim, Dongjin Hong and Jaehoon (Paul) Jeong (Sungkyunkwan University, Korea)*
- P-1.38 Agile Management of 5G Core Network based on SDN/NFV Technology**  
*Taesang Choi, TaeYeon Kim, Wouter TaverNier, Aki KORVALA and Jussi PAJUNPAA (ETRI, Korea)*
- P-1.39 Correction of Frequency Offset of FFT-based Frequency Hopping Detector**  
*Kyung-Gyu Lee and Seong-Jun Oh (Korea University, Korea)*
- P-1.40 Grayscale Access Control: Applying Differential Privacy to Access Control for Internet of Thing Environment**  
*Kangsoo Jung and Seog Park (Sogang University, Korea)*
- P-1.41 A Programmable Data Plane to Support In-Network Data Processing in Software-Defined IoT**  
*Ki-wook Kim and Sung-Gi Min (Korea University, Korea); Youn-Hee Han (Korea University of Technology and*

*Education, Korea)*

- P-1.42 Development of an IoT-based Atmospheric Environment Monitoring System**  
*Seung Ho Kim, Jong Mun Jeong, Min Tae Hwang and Chang Soon Kang (Changwon National University, Korea)*
- P-1.43 Microservices Model in WoO based IoT Platform for Depressive Disorder Assistance**  
*Sajjad Ali, Muhammad Golam Kibria, Muhammad Aslam Jarwar, Sunil Kumar and Ilyoung Chong (Hankuk University of Foreign Studies, Korea)*
- P-1.44 Device to Device Knowledge Transfer through Structured Data**  
*Donghun Lee, Ingoon Jang, Soonyong Song, Jinchul Choi and Youngsung Son (ETRI, Korea)*
- P-1.45 Analysis of LTE and NB-IoT Coexistence**  
*Hyungjin Kim, Seongchul Cho, Junghoon Oh and Gweondo Jo (ETRI, Korea)*
- P-1.46 Data Management and Searching System and Method to Provide Increased Security for IoT Platform**  
*Moon Yong Jung (Sogang University, Korea) and Ju Wook Jang (Sogang University, USA)*
- P-1.47 An Analysis of Economic Impact on IoT Under GDPR**  
*Junwoo Seo, Kyounghmin Kim and Mookyu Park (Korea University, Korea); Moosung Park (ADD, Korea); Kyungho Lee (Korea University, Korea)*
- P-1.48 Emergent-MQTT over SDN**  
*Jun-Hong Park, Seongjin Yun, Hyeong-su Kim and Won-Tae Kim (Koreatech University, Korea)*
- P-1.49 Secure Full-Duplex Relay Network using Cooperative Jamming**  
*Junguk Park, Sangseok Yun and Jeongseok Ha (KAIST, Korea)*
- P-1.50 Parameter Optimization of Block Interleaver for Polar Coding with Bit-interleaved Coded Modulation**  
*Yeon Joon Choi, Jong-Hwan Kim and Sang-Hyo Kim (Sungkyunkwan University, Korea)*
- P-1.51 Rule Extraction Ontology Generation from an Adaptive IoT Ecosystem Database**  
*JungHyen Ahn and Young B. Park (Dankook University, Korea)*
- P-1.52 Vital Sign Quality Assessment based on IR-UWB Radar Sensor**  
*Yuna Lee, Jeong Woo Choi and Sung Ho Cho (Hanyang University, Korea)*
- P-1.53 PAPR-based DSSS Signal Detection**  
*Heetae Jin and Suk Chan Kim (Pusan National University, Korea)*
- P-1.54 Turbo Equalizer Design and Performance Evaluation of 8PSK-TCM based Satellite Receiver System**  
*Changyoung An and Heung-Gyoon Ryu (Chungbuk National University, Korea); Sang Burm Ryu and Sang Gyu Lee (KARI, Korea)*
- P-1.55 Weight Based Movie Recommendation System Using K-Means Algorithm**  
*Md. Tayeb Himel, Mohammed Nazim Uddin and Mohammad Arif Hossain (East Delta University, Bangladesh); Yeong Min Jang (Kookmin University, Korea)*
- P-1.56 Control of Nonlinear, Complex and Black-Boxed Greenhouse System with Reinforcement Learning**  
*Byunghyun Ban (KAIST, Korea) and Soobin Kim (Kyungbuk National University, Korea)*
- P-1.57 SDR Implementation of Energy Detection with Non-uniform Quantization Scheme**  
*Dongho Seo, Hyeongyun Kim and Haewoon Nam (Hanyang University, Korea)*
- P-1.58 Circularly Polarized Ground Radiation Antenna using Planar Metal Loop**  
*Donghee Park, Longyue Qu, Jihwan Jeon, Shan Jiang and Hyeongdong Kim (Hanyang University, Korea)*
- P-1.59 Efficiency Null of Two-layered Wideband Ground Radiation Antenna using Magnetic Coupling**  
*Shan Jiang, Longyue Qu, Hyunwoong Shin, Donghee Park and Hyeongdong Kim (Hanyang University, Korea)*
- P-1.60 Spectrum Characteristics and Predistortion Gain in the Nonlinear High Power Amplifier(HPA)**  
*Kyeongsoo Jang and Heung-Gyoon Ryu (Chungbuk National University, Korea); Sang Burm Ryu and Sang Gyu Lee (KARI, Korea)*
- P-1.61 Seasonal and Diurnal Variations of Rain Attenuation Measured with the Koreasat 6 at 20.73 GHz**  
*Sujan Shrestha, Iram Nadeem, Jiwan Ghimire, Sun-Woong Kim, Ho Gyun Yu and Dong-You Choi (Chosun University, Korea)*
- P-1.62 Message Passing Algorithm based on QR Decomposition for an SCMA System with Multiple Antennas**  
*Gil-Mo Kang, Hyeon Min Kim, Yoan Shin and Oh-Soon Shin (Soongsil University, Korea)*
- P-1.63 Analysis on MIMO Transmit Diversity and Multiplexing Techniques for Ship Ad-hoc Networks under a Maritime Channel Model in Coastline Areas**  
*Ishtiaq Ahmad and KyungHi Chang (Inha University, Korea)*
- P-1.64 An Opportunistic Forwarding Scheme for ICN in Disaster Situations**  
*Min Wook Kang, Younghan Kim and Yun Won Chung (Soongsil University, Korea)*
- P-1.65 A Novel Joint User Pairing and Dynamic Power Allocation Scheme in MIMO-NOMA System**  
*Sunil Chinnadurai, Poongundran Selvaprabhu and Moon Ho Lee (Chonbuk National University, Korea)*
- P-1.66 A Single RF-chain Load Modulation Transmitter of Simple Structure for Massive MIMO**  
*JungHoon Oh, Hyungjin Kim, Seongchul Cho and Gweondo Jo (ETRI, Korea)*
- P-1.67 Performance Comparison between Wavelet-Based OFDM System and iFFT-Based OFDM System**  
*Jungu Lee and Heung-Gyoon Ryu (Chungbuk National University, Korea)*
- P-1.68 Radio Resource Allocation and Power Control Scheme to Mitigate Interference in Device-to-Device Communication Underlying LTE-A Uplink Cellular Networks**  
*Devarani Devi Ningombam and Seokjoo Shin (Chosun University, Korea)*
- P-1.69 A Computationally Efficient FBMC Transceiver based on Modified PPFB Structure**

*JaeHoon Park, Deok Won Yun and Won Choel Lee (Soongsil University, Korea); Soo Bin Um and Kwang Eog Lee (ADD, Korea)*

**P-1.70 MTTDL for Distributed Storage Systems with Double Node Failures**

*Yong Sung Kil and Sang-Hyo Kim (Sungkyunkwan University, Korea); Hosung Park (Chonnam National University, Korea)*

**P-1.71 An Indoor Positioning Method in a Concert Hall using Optical Camera Communication (OCC) Technology**

*Eunyoung Jeong, Bong-Seok Seo, Namtae Kim, Dongho You, Dong Ho Kim and Ye Hoon Lee (Seoul National University of Science and Technology, Korea)*

**P-1.72 Observation-Based Directional Energy Transmission Algorithm in Energy Harvesting Networks**

*Haneul Ko and Sangheon Pack (Korea University, Korea)*

**[Session II-1] 5G, 4G, LTE and LTE-Advanced 1**

Oct. 18, 15:50-17:30

Chair: Prof. Hiroshi Oguma (National Institute of Technology, Toyama College, Japan)

**II-1.1 NW-OFDM using Cyclic Postfix and Windowing for the eMBB Waveform of the 5G/B5G Mobile System**

*Changyoung An and Heung-Gyoon Ryu (Chungbuk National University, Korea); Yingshan Li (College of Information Technical Science, Nankai University, P.R. China); Mohammad Reza Asharif (University of Ryukyus, Japan)*

**II-1.2 A Way Forward for Accommodating NFV in 3GPP 5G Systems**

*Myung-Ki Shin, Seungik Lee, Soohwan Lee and Dongmyong Kim (ETRI/PEC, Korea)*

**II-1.3 Non-Orthogonal Random Access with Channel Inversion for 5G Networks**

*Jun-Bae Seo (Indian Institute of Technology Delhi, India); Hu Jin (Hanyang University, Korea); Bang Chul Jung (Chungnam National University, Korea)*

**II-1.4 Channel Switching Operation of LTE-LAA in Unlicensed Spectrum**

*Sunwook Hwang, Kangjin Yoon and Sunghyun Choi (Seoul National University, Korea)*

**II-1.5 Analysis on how to Improve Throughput Efficiently in LTE-Advanced Network Controlled D2D Communication**

*Richard Musabe, Victoire Mugongo Ushindi and Said Rutabayiro Ngoga (University of Rwanda, Rwanda); Célestin Twizere (University of Rwanda, Rwanda); Gaurav Bajpai (Kigali Institute of Science and Technology & KIST, Rwanda)*

**[Session II-2] Artificial Intelligence and Machine Learning 1**

Oct. 18, 15:50-17:30

Chair: Dr. Hyeon Park (ETRI, Korea)

**II-2.1 Image-based Disease Diagnosing and Predicting of the Crops through the Deep Learning Mechanism**

*Hyeon Park, Jee-Sook Eun and Se-Han Kim (ETRI, Korea)*

**II-2.2 GAN-D: Generative Adversarial Networks for Image Deconvolution**

*Ha Yeon Lee, Jin Myung Kwak, Byunghyun Ban, Seon Jin Na, Se Ra Lee and Heung-Kyu Lee (KAIST, Korea)*

**II-2.3 Sentiment Analysis of Social Networking Sites (SNS) Data using Machine Learning Approach for the Measurement of Depression**

*Anees Ul Hassan, Jamil Hussain, Musarrat Hussain, Muhammad Sadiq and Sungyoung Lee (Kyung Hee University, Korea)*

**II-2.4 Predicting Rice Yield for Bangladesh by Exploiting Weather Conditions**

*Md. Akter Hossain, Mohammed Nazim Uddin and Mohammad Arif Hossain (East Delta University, Bangladesh); Yeong Min Jang (Kookmin University, Korea)*

**II-2.5 A Pupil Data based Classification Model for Education Learning States**

*Jungjin Lee, Eunjae Hong and Hyunggon Park (Ewha Womans University, Korea)*

**II-2.6 A Study of Reference Metadata Classification with Deep Learning**

*Wonjun Choi, Jayhoon Kim, Soonyoung Kim and Jeonghwan Kim (KISTI, Korea)*

**[Session II-3] Advanced Communication Networks and Future Internet Technologies 1**

Oct. 18, 15:50-17:30

Chair: Mr. Muhamamad Hanif (Hanyang University, Korea)

**II-3.1 Improvement of a TCP Incast Avoidance Method using a Fine-grained Kernel Timer**

*Shigeyuki Osada (Japan Research Institute, Ltd., Japan); Shogo Wakai, Yukinobu Fukushima and Tokumi Yokohira (Okayama University, Japan)*

**II-3.2 Topology Construction for Flying Ad Hoc Networks (FANETs)**

*Do-Yup Kim and Jang-Won Lee (Yonsei University, Korea)*

**II-3.3 Impact of Rayleigh Fading Channel on Connectivity in Wireless Sensor Networks**

*Chunxiao Li, Fantian Zeng, Anran Zhen and Jun Sun (Yangzhou University, P.R. China)*

#### **II-3.4 MPTCP based In-Band Controlling for the Software Defined Networks**

*Ali Raza, Ali Gohar and Sanghwan Lee (Kookmin University, Korea)*

### **[Session II-4] Systems, Services and Applications for ICT Convergence 1**

Oct. 18, 15:50-17:30

Chair: Prof. Youn-Hee Han (Korea University of Technology and Education)

#### **II-4.1 Mediated Reality Photography with CCTV-Assisted Object Elimination Using Graph Cut**

*Seonghun Park (University of Science and Technology (UST), Korea); Junseong Bang and Hunjoo Lee (ETRI, Korea)*

#### **II-4.2 Measuring the State of ECN on the Internet**

*Chun-Xiang Chen (Prefectural University of Hiroshima, Japan)*

#### **II-4.3 Unmanned Aerial Vehicle Surveillance System (UAVSS) for Forest Surveillance and Data Acquisition**

*Md. Nazmus Saadat (UPM, Malaysia), Muhammad Mujahid Mohd Sharif (Universiti Kuala Lumpur Malaysia, Malaysia)*

#### **II-4.4 Computing and Communication Convergence Reflection to Legislation System and Higher Education Programs**

*Rihards Balodis and Inara Opmane (Institute of Mathematics and Computer Science, University of Latvia, Latvia)*

#### **II-4.5 Load Impedance Optimization of Magnetic Beamforming Wireless Power Transfer**

*Kyungtae Kim, Han-Joon Kim and Ji-Woong Choi (Daegu Gyeongbuk Institute of Science & Technology, Korea)*

### **[Invited Paper Session I] Advanced Technologies for Future Network Services**

Oct. 18, 15:50-17:30

Chair: Dr. Hyeong Ho Lee (ETRI, Korea)

#### **IP-5.1 Order Dependency-Aware Service Function Placement in Service Function Chaining**

*Hosung Baek, Insun Jang, Haneul Ko and Sangheon Park (Korea University, Korea)*

#### **IP-5.2 SDN-based Wireless Access Network with Media Independent Management Capabilities**

*Hyeong Ho Lee, Yun Chul Choi and Byung Jun Ahn (ETRI, Korea)*

#### **IP-5.3 Medium Access with Implicit Contention Avoidance for Peer Aware Communications**

*Seong-Soon Joo, Nae-Soo Kim and Cheol Sig Pyo (ETRI, Korea)*

#### **IP-5.4 Performance Analysis of Energy Consumption in Machine-Type Communication**

*Yujin Lim (Sookmyung Women's University, Korea)*

#### **IP-5.5 Interference Reduction Mechanism for Fractional Frequency Reuse in Hybrid Wireless Network**

*Mohammad Arif Hossain (East Delta University, Bangladesh); Mohammed Shareef Ifthekhar (Kookmin University, Korea); A. S. Ashiq and Mohammed Nazim Uddin (East Delta University, Bangladesh); Yeong Min Jang (Kookmin University, Korea)*

October 19(Thursday), 2017

### **[Session III-1] Advanced Wireless & Mobile Communication Systems and Infrastructure 2**

Oct. 19, 08:30-10:10

Chair: Prof. Dong Ku Kim (Yonsei University, Korea)

#### **III-1.1 Complexity Reduced MIMO Detection with Three Iterative Loops**

*Saleem Ahmed and Fahad Iqbal (Dawood University of Engineering and Technology, Pakistan); Meixiang Zhang (Yangzhou University, P.R. China); Sooyoung Kim (Chonbuk National University, Korea)*

#### **III-1.2 Construction of Transmission Timing Control System using FPGA for QZSS Short Message Synchronized SS-CDMA Communication**

*Rei Kawai and Hiroshi Oguma (National Institute of Technology, Toyama College, Japan); Suguru Kameda and Noriharu Suematsu (Tohoku University, Japan)*

#### **III-1.3 Performance Evaluation of Dual-Band Polar Transmitter Architecture for the Connected Car**

*Jin-Kyu Choi and Byung-Tae Jang (ETRI, Korea); Heung-Gyoon Ryu (Chungbuk University, Korea)*

#### **III-1.4 Performance Evaluation of M-ary SS/OFDM Systems with Short Spread Spectrum Codes over Visible Light Channels**

*Qirui Xia, Fumihito Sasamori, Shiro Handa and Osamu Takyu (Shinshu University, Japan)*

#### **III-1.5 Content Popularity based Fast Content Transmission in the Wireless Environment**

*Nazib Abdun Nasir and Seong-Ho Jeong (Hankuk University of Foreign Studies, Korea)*

### **[Session III-2] Vehicular Information and Communication Technologies 1**

Oct. 19, 08:30-10:10

Chair: Prof. Rong Ran (Ajou University, Korea)

**III-2.1 Enhanced Modulation Classification Algorithm based on Kolmogorov-Smirnov Test**

*Seongjin Ahn, Jaeyoon Lee, Dongweon Yoon and Jun Won Choi (Hanyang University, Korea)*

**III-2.2 Travel Prediction-based Data Forwarding using Realistic Traffic Model in Vehicular Networks**

*Younghwa Jo (Sungkyunkwan University, Korea); Youngmi Baek (DGIST, Korea); Jaehoon (Paul) Jeong (Sungkyunkwan University, Korea)*

**III-2.3 Joint Relay Selection and Spectrum Allocation in D2D-based Cooperative Vehicular Networks**

*Zhenyu Zhou (North China Electric Power University & Waseda University, P.R. China); Houjian Yu (North China Electric Power University, P.R. China); Chen Xu (North China Electric Power University, P.R. China) and Fei Xiong (North China Electric Power University, P.R. China); Yunjian Jia (Chongqing University, P.R. China); Guojun Li (Chongqing Communication Institute, P.R. China)*

**III-2.4 4-QAM Gray Coding for Deep Neural Network based Decoder Training**

*Minhoe Kim and Dong-Ho Cho (KAIST, Korea)*

**III-2.5 Integration of Photogrammetry and Optical Camera Communication Technologies for Vehicle Positioning**

*Md. Tanvir Hossan, Mostafa Zaman Chowdhury and Yeong Min Jang (Kookmin University, Korea)*

**[Session III-3] Smart Cities and Indoor Positioning**

Oct. 19, 08:30-10:10

Chair: Prof. Sanghwan Lee (Kookmin University, Korea)

**III-3.1 An Evolution-by-design Approach: Toward Multi-disciplinary Life-cycle Management of IoT in City Platform as a Service**

*Toshihiko Yamakami (ACCESS, Japan)*

**III-3.2 An Organizational Coordination Model for IoT: A Case Study of Requirement Engineering of City-Government in Tokyo in City Platform as a Service**

*Toshihiko Yamakami (ACCESS, Japan)*

**III-3.3 Influence of Multi Path on Positioning Accuracy in a Low Sky View Factor Environment**

*Sho Tatsuguchi, Yuta Oshima and Hiroshi Oguma (National Institute of Technology, Toyama College, Japan); Suguru Kameda and Noriharu Suematsu (Tohoku University, Japan)*

**III-3.4 Performance Evaluation of RSS Fingerprinting Method to Track ZigBee Devices Location Using Artificial Neural Networks**

*Hening Pram Pradityo, Lukman Rosyidi, Misbahuddin Misbahuddin and Riri Fitri Sari (University of Indonesia, Indonesia)*

**III-3.5 Improving Accuracy in Indoor Localization System Using Fingerprinting Technique**

*Saddam Alraih and Abdulraqueb Alhamadi (Faculty of Engineering, Multimedia University, Malaysia); Ibraheem Shayea and Ahmed M. Al-Samman (Wireless Communication Centre, Universiti Teknologi Malaysia)*

**[Session III-4] Information & Communication Theory, and Their Applications 1**

Oct. 19, 08:30-10:10

Chair: Prof. Won-Yong Shin (Dankook University, Korea)

**III-4.1 Nuclear Quadrupole Resonance Signal Detectability Enhancement Methods - An Overview**

*Kairan Zhu, Zhifeng Zhao and Huiqin Jia (Xi'an Shiyu University, P.R. China)*

**III-4.2 Linear Time Complexity GF(256) RaptorQ Implementation on GPU**

*Sunwoong Joo (Samsung Electronics)*

**III-4.3 Cause-Effect Series Determination from Web Documents**

*Chaveevan Pechsiri and Sumran Phainoun (Dhurakij Pundit University, Thailand); Rapepun Piriyakul (Ramkhamhaeng University, Thailand)*

**III-4.4 A Research of the Relationship between Customers' Loyalty and Degree of Involvement in Virtual Game Props Trading Site**

*Yi-Lin Yu (Fu Jen Catholic University, Taiwan)*

**III-4.5 Implementation of Product-oriented Omni Channel Technology Using Multi-modal Information**

*Weon-Geun OH, Seung-Jae Lee, Keun-Dong Lee, Da-Un Jung, Hyung-Kwan Son and Jong-Kook Ko (ETRI, Korea)*

**[Session III-5] ICT Signal Processing**

Oct. 19, 08:30-10:10

Chair: Dr. In Hwan Lee (ETRI, Korea)

**III-5.1 Reconciliation with Polar Codes Constructed using Gaussian Approximation for Long-distance Continuous-variable Quantum Key Distribution**

*Yongseon Kim, Changho Suh and June-Koo Kevin Rhee (KAIST, Korea)*

**III-5.2 On Efficient Description of Rate Compatible Polar Codes**

*Jaeyoel Kim (Samsung Electronics, Korea); Jong-Hwan Kim, Hyosang Ju and Sang-Hyo Kim (Sungkyunkwan*

University, Korea)

**III-5.3 Joint Activity Detection and Channel Estimation via Bayesian Orthogonal Matching Pursuit**

*Euitaek Lee, Jinyoup Ahn, Namik Kim and Kwang Bok Lee (Seoul National University, Korea)*

**III-5.4 Enhanced Clutter Removal and Peak Detection Methods for Localization Using IR-UWB Radar**

*Young-Jun Yoon, Seongwook Lee, Byeongho Lee and Seong-Cheol Kim (Seoul National University, Korea); Chongmin Lee (Samsung Electronics Co., Ltd, Korea)*

**III-5.5 Enhanced Performance for LMMSE Equalizer with Factor Graphs**

*Lijuan Zhang (Dalian University of Technology, P.R. China); Guifeng Wang (SAP Chinese Co. Ltd, P.R. China); Minglu Jin (Dalian University of Technology, P.R. China); Jae Mounng Kim and Sang-Jo Yoo (Inha University, Korea)*

**[Session IV-1] Systems, Services and Applications for ICT Convergence 2**

Oct. 19, 10:30-12:10

Chair: Dr. Marko Hoyhtya (VTT Technical Research Centre of Finland Ltd, Finland)

**IV-1.1 Open-Source IO Visor eBPF-based Packet Tracing on Multiple Network Interfaces of Linux Boxes**

*Taekho Nam and JongWon Kim (Gwangju Institute of Science and Technology, Korea)*

**IV-1.2 Towards Interoperability in Mobile Coupons: Enabling Cross Retailer Coupon Validation**

*Fuchs Klaus, Vuckovac Denis and Ilic Alexander (ETH Zurich, Switzerland)*

**IV-1.3 Biodiversity Awareness Using Mobile Application: Ikimono Mikke**

*Aslina Baharum, Nordaliela Mohd. Rusli and Ericsson Kua Juck Sen (Universiti Malaysia Sabah, Malaysia); Nurul Hidayah Mat Zain (Universiti Teknologi MARA, Malaysia); Iza Azura Ahmad Bahar (Universiti Malaysia Sabah, Malaysia); Muhammad Omar (Universiti Teknologi MARA Sarawak, Malaysia)*

**IV-1.4 Recommender System Improvement Cases through Implicit Feedbacks from Social Network**

*Mohamad Ivan Fanany, Ibrahim Malik Khasbulloh, Azis Maarij Jamil and Muhammad K.A. Taqvim (Faculty of Computer Science, Universitas Indonesia, Indonesia)*

**IV-1.5 Connectivity for Autonomous Ships: Architecture, Use Cases, and Research Challenges**

*Marko Höyhtyä, Jyrki M Huusko and Markku Kiviranta (VTT Technical Research Centre of Finland Ltd, Finland); Kenneth Sohlberg and Juha Rokka (Rolls-Royce Marine, Finland)*

**IV-1.6 Releasing Stress Using Music Mood Application: DeMUSE**

*Aslina Baharum and Tan Wei Seong (Universiti Malaysia Sabah, Malaysia); Nurul Hidayah Mat Zain (Universiti Teknologi MARA, Malaysia); Nurhafizah Moziyana Mohd Yusop (Faculty of Defence Science and Technology, National Defence University of Malaysia, Malaysia); Muhammad Omar (Universiti Teknologi MARA, Malaysia); Nordaliela Mohd. Rusli (Universiti Malaysia Sabah, Malaysia)*

**[Session IV-2] Smart Media & Broadcasting, and Smart Devices/Appliances**

Oct. 19, 10:30-12:10

Chair: Dr. Sangmi Lee (IITP, Korea)

**IV-2.1 Enhanced Quality Adaptation Scheme for Improving QoE of MPEG DASH**

*Sunghye Lee, Hyunsuk Roh and Namkyung Lee (ETRI, Korea)*

**IV-2.2 Adaptive High-Resolution Image Transmission Method using MPEG-DASH**

*Sunho Seo, Younghwan Shin, Jusik Yun, Wonsik Yang and Jong-Moon Chung (Yonsei University, Korea)*

**IV-2.3 Nasolabial Angle Measuring System in Lateral Face Image for Bimaxillary Protrusion Judgment**

*Junheum Park, Seongjoon Park and Hwangnam Kim (Korea University, Korea)*

**IV-2.4 A Study on Emotion Recognition Method and Its Application using Face Image**

*Hyeon-Jung Lee and Kwang-Seok Hong (Sungkyunkwan University, Korea)*

**IV-2.5 Face Sketch Synthesis using Conditional Adversarial Networks**

*Philip Chikontwe and Hyo Jong Lee (Chonbuk National University, Korea)*

**[Session IV-3] Advanced Communication Networks and Future Internet Technologies 2**

Oct. 19, 10:30-12:10

Chair: Dr. Zhao Mingyu (Nokia Shanghai Bell, China)

**IV-3.1 AODV-based Seamless Data Delivery in the Intermittent V2I Communication Environment**

*Chanhyuk Cho and Sanghyun Ahn (University of Seoul, Korea)*

**IV-3.2 Dynamic Resource Allocation Algorithm of UAS by Network Environment and Data Requirement**

*Hye-Rim Cheon, Jun-Woo Cho and Jae-Hyun Kim (Ajou University, Korea)*

**IV-3.3 On CDF-based Scheduling with Non-Uniform User Distribution in Multi-Cell Networks**

*Xuelian Wu, Waqas Tariq Toor and Hu Jin (Hanyang University, Korea); Bang Chul Jung (Chungnam National University, Korea)*

**IV-3.4 Performance Analysis of Medium Access Control using Appropriate Permission Probability Algorithm**

*Warakorn Srichavengsup (Thai-Nichi Institute of Technology, Thailand)*

**IV-3.5 Optimization of Cognitive Radio Secondary Base Station Positioning and Operating Channel**



## Selection for IoT Sensor Networks'

Wen Jinyi, Yang Qin, Anish Prasad Shrestha and Sang-Jo Yoo (Inha University, Korea)

## [Session IV-4] Encryption and Security for ICT Convergence

Oct. 19, 10:30-12:10

Chair: Prof. Yao-Tung Tsou (Feng Chia University, Taiwan)

### IV-4.1 An Efficient Approach to Securing User Data in Android

Suranya Jayan, Jiangfeng Sun and Dongwan Shin (New Mexico Tech, USA)

### IV-4.2 Improved Cryptographic Model for Better Information Security

Sunil Kumar, Manish Kumar, Mrinal Kanti Das and Sanjeev Singh (University of Delhi, India); Rajat Budhiraja (Aricent Technologies (H) Ltd.)

### IV-4.3 A Variant of Schnorr Signature Scheme with Tight Security Reduction

Tiong-Sik Ng, Syh-Yuan Tan and Ji-Jian Chin (Multimedia University, Malaysia)

### IV-4.4 Differential Privacy-based Data De-identification Protection and Risk Evaluation System

Yao-Tung Tsou, Hung-Li Chen and Jia-Yang Chen (Feng Chia University, Taiwan); Yennun Huang (Academia Sinica, Taiwan); Pang-Chieh Wang (Computational Intelligence Technology Center, Industrial Technology Research Institute, Taiwan)

### IV-4.5 Stream Cipher by Reed-Solomon Code

Tao Wu (Shenzhen Research Institute by Sun Yat-Sen University, P.R. China) and Ruomei Wang (Sun Yat-Sen University, P.R. China)

## [Invited Paper Session II] Physical Layer Techniques for 5G and Beyond

Oct. 19, 10:30-12:10

Chair: Prof. Seok-Hwan Park (Chonbuk National University, Korea)

### IP-5.1 Optimized Superposition Coding for Hybrid Soft-Transfer and Hard-Transfer Fronthauling in Fronthaul-Constrained C-RAN Systems

Daesung Yu and Junbeom Kim (Chonbuk National University, Korea); In-Kyeong Choi (ETRI, Korea); Seok-Hwan Park (Chonbuk National University, Korea)

### IP-5.2 Using Generalized Similarity Filter to Enhance Proximity Detection for Sparse Beacon Deployment

Li Zhu and Rong Ran (Ajou University, Korea); Pai Chet Ng and James She (Hong Kong University of Science and Technology, Hong Kong)

### IP-5.3 Beamforming Design and User Grouping for FDD Massive MIMO Systems

Yo-Seb Jeon, Hwan-Seok Ku and Namyoong Lee (POSTECH, Korea)

### IP-5.4 Joint User Activity and Data Detection for Grant-free Non-Orthogonal Multiple Access

Sunho Park, Hyoungju Ji, Seungnyun Kim and Byonghyo Shim (Seoul National University, Korea)

### IP-5.5 Multi-Cell Pseudo-Random Beamforming: Opportunistic Feedback and Beam Selection

Woong Son and Bang Chul Jung (Chungnam National University, Korea); Won-Yong Shin (Dankook University, Korea); Yoan Shin (Soongsil University, Korea)

## [Session P-2] Poster Session 2

Oct. 19, 10:30-12:10

Chair: Dr. Hyunho Park (ETRI, Korea), Prof. Hyunggon Park (Ewha University, Korea),

Prof. Jaeshin Jang (Inje University, Korea)

### P-2.1 CoAP-based Lightweight Information Exchange Technique for Demand Response

SeungChul Son, Hyungok Lee and Byung-Tak Lee (ETRI, Korea)

### P-2.2 Building a Big Data Platform for Large-scale Security Data Analysis

Jong-Hoon Lee, Young Soo Kim, Jong Hyun Kim and Ik Kyun Kim (ETRI, Korea); Ki-Jun Han (Kyungpook National University, Korea)

### P-2.3 Performance Analysis for the Battery Consumption of the 3GPP NB-IoT Device

Sung-Min Oh, KwangRyul Jung, MyungSan Bae and JaeSheung Shin (ETRI, Korea)

### P-2.4 A Composite Structure of ICT for Smart City: Integration Infrastructure and Collaboration Platform

Jae Young Ahn, Hyun-Woo Lee and Jae-Doo Huh (ETRI, Korea); Dae Joon Hwang (SungKyunKwan University, Korea)

### P-2.5 Eye-tracking on Smartphones using Regression-based Prediction

Young-Joo Han (Viewworks Co., Ltd., Korea); Wooseong Kim (Cachon University, Korea); Joon-Sang Park (Hongik University, Korea)

### P-2.6 DeLightTouch: Light Sensor Assisted Multi-touch Gestures on Unmodified Commodity Smartwatches

Hyoseok Yoon, Se-Ho Park and Kyung-Taek Lee (KETI, Korea)

### P-2.7 A Study on Jamming Technique against Monopulse Type Missile

Jeil Jo (ADD, Korea) and Jaemin Ahn (Chungnam National University, Korea)

### P-2.8 Interference Alignment for Frequency Selective Fading Channels in Wireless Local Area Network

- Jinhyung Oh and Young Jun Chong (ETRI, Korea)*
- P-2.9 Channel Occupancy Time Influence on LTE and Wi-Fi Coexistence Performance**  
*Sungjin You and Seungkeun Park (ETRI, Korea)*
- P-2.10 Standardization Activities for RPAS CNPC systems**  
*Hee Wook Kim, Kunseok Kang, Kwangjae Lim, Byoung-Sun Lee and Jae Young Ahn (ETRI, Korea)*
- P-2.11 Analysis of Periodic Broadcast Message for DSRC Systems under High-density Vehicle Environments**  
*Yoo Seong Song and Shin Kyung Lee (ETRI, Korea)*
- P-2.12 SGDR: A Simple GPS-based Disrupt-tolerant Routing for Vehicular Networks**  
*Heeyoung Jung (ETRI, Korea) and Chang Choo (San Jose State University, USA)*
- P-2.13 Test of Various Data Transmission by Multiple Nodes in WAVE Communication**  
*Jeong-Woo Lee and Hyun Seo Oh (ETRI, Korea)*
- P-2.14 Requirements for Older Drivers in the Driver-Adaptive Vehicle Interaction System**  
*Kyongho Kim, Dohyun Kim, HyunKyun Choi and Byungtae Jang (ETRI, Korea)*
- P-2.15 Vehicle Data Server Implementation based on Emerging Industry Standards**  
*Wonsuk Lee (ETRI, Korea)*
- P-2.16 Proxy PSAP: Filtering out False Alarms for the PSAP Overload Problem**  
*Taehyoung SHIM, Jun Seob LEE and Hyoung Jun KIM (ETRI, Korea)*
- P-2.17 Effects of the Providing an Augmented Reality Information on the Cognitive Reaction Behavior under the Reduced Visibility Traffic Environment**  
*Yoonsook Hwang, Kyong-Ho Kim and Hyun-Kyun Choi (ETRI, Korea)*
- P-2.18 Comparative Analysis of Machine Learning Algorithms to Urban Traffic Prediction**  
*Yong-Ju Lee and Okgee Min (ETRI, Korea)*
- P-2.19 An IoT-based CBL Methodology to Create Real-world Clinical Cases for Medical Education**  
*Maqbool Ali and Sungyoung Lee (Kyung Hee University, Korea); Byeong Ho Kang (University of Tasmania, Australia)*
- P-2.20 Simple CNT Nanocomposite Piezoresistive Press Sensor**  
*Wangjoo Lee, Hyun-Woo Oh and Jae-doo Huh (ETRI, Korea); Sang Jun Moon (Ulsan National Institute of Science and Technology, Korea)*
- P-2.21 3D Hand Gestures Calibration Method for Multi-Display by using a Depth Camera**  
*Hee-Kwon Kim, Jisu Lee, ChoRong Yu, HeeSook Shin, Youn-Hee Gil and Hyung-Keun Jee (ETRI, Korea)*
- P-2.22 Estimation of 3D Ball Motion using an Infrared and Acoustic Vector Sensor**  
*Sang-Woo Seo and Myunggyu Kim (ETRI, Korea)*
- P-2.23 Compatibility Analysis between Field Disturbance Sensors and Intelligent Transport System in 5.8GHz Adjacent Bands**  
*Suna Choi, Jungsun Eum and Seungkeun Park (ETRI, Korea)*
- P-2.24 Human Monitoring System using Drones for Riverside Area**  
*Seonghyun Kim and Wonjae Lee (ETRI, Korea); Jihyeon Yim (University of Science and Technology, Korea); Young-Su Park and Yong-Tae Lee (ETRI, Korea)*
- P-2.25 Comparison of Charging Region Differences According to Receiver Structure in Drone Wireless Charging System**  
*Sang-Won Kim and In-Kui Cho (ETRI, Korea); Sung-Yong Hong (Chungnam National University, Korea)*
- P-2.26 A Design of Power Amplifier for CMOS Crystal-less Wireless Connectivity**  
*Suk-hui Lee, Ki-Jin Kim and Kwang-Ho Ahn (KETI, Korea); Sung-il Bang (Dankook University, Korea)*
- P-2.27 Implementation of Model-based Development Tool and Run-time Engine for Digital Cockpit System**  
*Changrak Yoon, Byoung-Jun Park and Dohyun Kim (ETRI, Korea)*
- P-2.28 IoT-based Defect Predictive Manufacturing Systems**  
*Young Jin Kwon and Do Hyun Kim (ETRI, Korea)*
- P-2.29 A Cross-Browser, Web-based Geospatial Open Platform using HTML5 and WebGL**  
*Junghee Jo and Insung Jang (ETRI, Korea)*
- P-2.30 Physiological Signals and Recognition of Negative Emotions**  
*Byoung-Jun Park, Changrak Yoon, Eun-Hye Jang and Do-Hyun Kim (ETRI, Korea)*
- P-2.31 Implementation of IoT based PV Monitoring System with Message Queuing Telemetry Transfer Protocol and Smart Utility Network**  
*Chang-Sic Choi, Jin-Doo Jeong, Jinsoo Han, Wan-Ki Park and Il-Woo Lee (ETRI, Korea)*
- P-2.32 Usage Scenario and User Interface for Ice Hockey Game Analysis**  
*Kwang-Yong Kim and Gi-Mun Um (ETRI, Korea)*
- P-2.33 GIS-based Susceptibility Assessment of the Rockfall in Freeze-thaw Season**  
*Jin Son (ETRI, Korea); Jihwan Park (University of Seoul, Korea); Hyeong-Dong Park (Seoul National University, Korea); Yong-Tae Lee (ETRI, Korea)*
- P-2.34 Combinatorial Multi-Armed Bandits in Cognitive Radio Networks: A Brief Overview**  
*Sunjung Kang and Changhee Joo (UNIST, Korea)*
- P-2.35 Sports Motion Analysis System using Wearable Sensors and Video Cameras**  
*Woosuk Kim and Myunggyu Kim (ETRI, Korea)*
- P-2.36 Research on Scalable Bandwidth Transmission for Digital Terrestrial TV Broadcasting**  
*JaeHwui Bae, JaeHyun Seo, YoungSu Kim, Jae-Young Lee, Namho Hur and Heung Mook Kim (ETRI, Korea)*

- P-2.37 Design and Implementation of the Companion App. Service for Scene-based Product Advertisement**  
*Sang-Yun Lee, Jeong-Woo Son, Wonjoo Park and Sun-Joong Kim (ETRI, Korea)*
- P-2.38 Tagged Video Retrieval System using Domain Ontology and Word Embedding**  
*Gyeong-june Hahm, Chang-uk Kwak and Sun-joong Kim (ETRI, Korea)*
- P-2.39 Object Screen Framework for Digital Signage Application**  
*Ilhong Shin, Sanghoon Lee, Eunjoon Rhee and Namkyung Lee (ETRI, Korea)*
- P-2.40 Scene Studio: Authoring Tool for VoD Clip Service**  
*Sang-Yun Lee, Wonjoo PARK, Jeong-Woo Son and Sun-Joong Kim (ETRI, Korea)*
- P-2.41 Patched-based Deep Boltzmann Shape Priors for Visual Tracking**  
*Sanghoon Lee, Ilhong Shin, Eunjun Rhee, Sunghee Lee and Namkyung Lee (ETRI, Korea)*
- P-2.42 High Quality Texture Reconstruction from Multi-view Images**  
*Hye-sun Kim and Chang-joon Park (ETRI, Korea)*
- P-2.43 Distributed Energy Resources Monitoring and Control Based on IoT Protocol**  
*Moonok Choi and Ilwoo Lee (ETRI, Korea)*
- P-2.44 Multi-site Photovoltaic Power Generation Forecasts based on Deep-learning Algorithm**  
*Jeong-In Lee and Il-Woo Lee (ETRI, Korea); Sang-Ha Kim (Chungnam National University, Korea)*
- P-2.45 Optimization Mechanism of Energy Cluster for Zero Energy Town**  
*Hong-Soon Nam, Seok-Jin Lee, Tae-Hyung Kim, Yoon-Kee Hong and Youn-Kwae Jeong (ETRI, Korea)*
- P-2.46 CES Peak Demand Shaving with Energy Storage System**  
*Soyoung Park and Wan-Ki Park (ETRI, Korea)*
- P-2.47 Detection Method of Dimmable Packet with Low Complexity for Cost-Effective Energy Management**  
*Jin-Doo Jeong and Ilwoo Lee (ETRI, Korea); Jong-Wha Chong (Hanyang University, Korea)*
- P-2.48 Energy Trading System of Distributed Resources**  
*Jihyun Lee, Youngmee Shin and Ilwoo Lee (ETRI, Korea)*
- P-2.49 Energy Information Collecting Agent for IoT Big Data System**  
*Tai-Yeon Ku and Wan-Ki Park (ETRI, Korea); Hoon Choi (Chungnam National University, Korea)*
- P-2.50 Multi-Log Analysis Platform for Supporting Public Safety Service**  
*Hyunho Park, Eunjung Kwon, Eui-Suk Jung, Sungwon Byon, Hyun-Woo Lee and Yong-Tae Lee (ETRI, Korea)*
- P-2.51 Study on Requirements and Architecture for Enhancing Pedestrian Mobility**  
*Eunyoung Cho, Soyeon Lee, Feyissa Woyano and Sangjoon Park (ETRI, Korea)*
- P-2.52 Network based vByod Scheme in NFV Platform**  
*Jonghwan Kim and Tae-Yeon Kim (ETRI, Korea); Dohyung Kim (Sungkyunkwan University, Korea)*
- P-2.53 Virtual network services for Multiple Domain Transport Networks**  
*Bin Yeong Yoon and Sae Hyong Park (ETRI, Korea); Youngkil You (Woorinet, Korea)*
- P-2.54 Crowdedness Measuring System Considering View Angle of CCTV Camera**  
*Yewon Kim, Seongjoon Park and Hwangnam Kim (Korea University, Korea)*
- P-2.55 A Lightweight Authentication Mechanism between IoT Devices**  
*Jin-Hee Han and JeongNyeo Kim (ETRI, Korea)*
- P-2.56 DNS Naming Services for Service Discovery and Remote Control for Internet-of-Things Devices**  
*Seokhwa Kim, Keuntae Lee and Jaehoon (Paul) Jeong (Sungkyunkwan University, Korea)*
- P-2.57 Remote Security Management Server for IoT Devices**  
*Seungyong Yoon and Jeongnyeo Kim (ETRI, Korea)*
- P-2.58 Blockchain based Smart Door Lock system**  
*DongHee Han, Hongjin Kim and Juwook Jang (Sogang University, USA)*
- P-2.59 Resource Allocation Scheme for Wireless Powered Wiretap Channel**  
*Myoungjun Ko, Sangseok Yun and Jeongseok Ha (KAIST, Korea)*
- P-2.60 Compressive Symbol Detection via Template Matching**  
*Jae-Hyuck Park, Yookyung Kim and Seonghyun Kim (ETRI, Korea)*
- P-2.61 Quadrature Spatial Modulation with Non-uniform Lattice Constellation**  
*Yulong Shang, Hojun Kim, Seunghyeon Kim, Cheolsung Kim and Taejin Jung (Chonnam National University, Korea)*
- P-2.62 A Study on a Delay-Doppler Estimation Method in Fast Fading Channels of High-speed Mobile Vehicles**  
*Woo Yong Lee (ETRI, Korea)*
- P-2.63 An LFM-based Preamble for Underwater Communication**  
*Rothna Pec, Mohammed Saquib Khan and Yong Soo Cho (Chung-Ang University, Korea)*
- P-2.64 Analysis on Magneto-Inductive Wave Refraction in Underwater Communication Networks**  
*Hao Li and Yoan Shin (Soongsil University, Korea)*
- P-2.65 Hierarchy Architecture Security Design for Energy Cloud**  
*Yoon-Kee Hong, Hong-Soon Nam, Seok-Jin Lee, Taehyung Kim and Youn-Kwae Jeong (ETRI, Korea)*
- P-2.66 Secure Voice Communication Service Based on Security Platform for Mobile Devices**  
*GeonLyang Kim and JeongNyeo Kim (ETRI, Korea)*
- P-2.67 Malware Detection using Malware Image and Deep Learning**  
*Sunoh Choi, Sungwook Jang, Youngsoo Kim and Jonghyun Kim (ETRI, Korea)*
- P-2.68 Implementation of a Distributed Processing Engine for Spatial Big-Data Processing based on Batch and Stream**

- Sang-Su Kim and Kwaun-Sik Song (ICTWAY, Korea)*
- P-2.69 National Repository of Papers based on Open Access**  
*Heeseok Choi and Jaesoo Kim (KISTI, Korea)*
- P-2.70 Driver Distraction Detection using Single Convolutional Neural Network**  
*Whui Kim, Hyun-Kyun Choi and Byung-Tae Jang (ETRI, Korea); Jinsu Lim (Chungnam National University, Korea)*
- P-2.71 Scene Emotion Detection using Closed Caption based on Hierarchical Attention Network**  
*Chang-Uk Kwak, Jeong-Woo Son, Alex Lee and Sun-Joong Kim (ETRI, Korea)*
- P-2.72 Accelerating Training of DNN in Distributed Machine Learning System with Shared Memory**  
*Eun-Ji Lim, Shin-Young Ahn and Wan Choi (ETRI, Korea)*
- P-2.73 On the Mixed Support of TDMA and SCPC for Satellite Disaster Communications Network**  
*Min-Su Shin, Joon-Gyu Ryu and Deok-Gil Oh (ETRI, Korea)*
- P-2.74 On the Network Clock Reference Variations Compensation for Satellite TDMA Network**  
*Min-Su Shin, Joon-Gyu Ryu and Deock-Gil Oh (ETRI, Korea)*
- P-2.75 The Wideband Characteristics of 28/38 GHz in Urban Low-rise Environments**  
*Jong Ho Kim, YoungKeun Yoon and Young Jun Chong (ETRI, Korea)*
- P-2.76 Wideband Channel Waveform and Structure for Unmanned Aircraft Systems**  
*Kwangjae Lim, Heewook Kim, Tae Chul Hong and Jae Young Ahn (ETRI, Korea)*
- P-2.77 Analysis of the Interference Effects from Maritime Earth Station in Motion to 5G Mobile Service**  
*Ho-Kyung Son and Young-Jun Chong (ETRI, Korea)*
- P-2.78 Use of Tractroid Factor in Deformed Parabolic Reflector Antenna which Transfers Orbital Angular Momentum Modes**  
*Ju Yeon Hong, Wangjoo Lee, Bong-Su Kim, Min-Soo Kang, Jung-Bin Kim, Woo Jin Byun and Myung Sun Song (ETRI, Korea)*
- P-2.79 Outage Probability of Finite-Sized Selective Relaying Systems with Unreliable Backhubs**  
*Hongwu Liu and Kyung Sup Kwak (Inha University, Korea)*
- P-2.80 Energy-aware Cooperative MAC Protocol for Mobile Ad hoc Networks**  
*Jaeshin Jang (Inje University, Korea) and Balasubramaniam Natarajan (Kansas State University, USA)*
- P-2.81 Fast Tunable Laser Assembly and Burst Mode Receiver for Photonic Switched Optical Networks**  
*Sanghwa Yoo, Joon Ki Lee and Kwangjoon Kim (ETRI, Korea)*
- P-2.82 Low-Power Consumption Beacon Recognition Method to Access Wireless Sensor Networks**  
*Soonyong Song, Ingoon Jang, Donghun Lee, Jinchul Choi and Youngsung Son (ETRI, Korea)*
- P-2.83 Trust Domain based Trustworthy Networking**  
*Byeong Ok Kwak and Tae Soo Chung (ETRI, Korea)*
- P-2.84 Low Delay Switch Scheduling for Data Center Optical Switch**  
*Jongtae Song, Kyeong-Eun Han, Dae-Ub Kim, Chansung Park and Kwangjoon Kim (ETRI, Korea)*
- P-2.85 Design of Tele-Commanding System using Asynchronous Message Service based on Delay Tolerant Network for Space Communication**  
*Kyung-Rak Lee, Jin-Ho Jo and Byoung-Sun Lee (ETRI, Korea); Jin-Woo Kim (Hanyang University, Korea)*
- P-2.86 FSK PHY Design with Enhanced Synchronization for Low-Power Wide-Area Connectivity**  
*Mi-Kyung Oh and Cheol-ho Shin (ETRI, Korea)*
- P-2.87 Hybrid Beamforming for Multi-User Transmission in Millimeter Wave Communications**  
*Minhyun Kim, Junghoon Lee and Junhwan Lee (ETRI, Korea)*
- P-2.88 A Study on Management of Multi-RAT Unit in Mobile Hotspot Network Enhancement System**  
*Yousun Hwang, MyungSang Bae and Jaesheung Shin (ETRI, Korea)*
- P-2.89 Clutter Loss Characteristic in mm-Wave Bands for Small Urban Environment**  
*YoungKeun Yoon, JongHo Kim, KyungWon Kim, MyungDon Kim and YoungJun Chong (ETRI, Korea)*
- P-2.90 Structure of NB-IoT NodeB Systems**  
*Eunjeong Shin and Gweondo Jo (ETRI, Korea)*
- P-2.91 Mobile Crowd Sensing based on CICN**  
*Taewan You (ETRI, Korea); Muhammad Umair (University of Science and Technology ETRI Campus, Korea); Yong-Gen Hong (ETRI, Korea)*
- P-2.92 Name Resolution Service for CCN**  
*Jungha Hong, Tae-wan You and Yong-Geun Hong (ETRI, Korea)*
- P-2.93 Multi-tier Multi-access Edge Computing: The Role for the Fourth Industrial Revolution**  
*Nhu-Ngoc Dao, Yunseong Lee and Sungrae Cho (Chung-Ang University, Korea); Eungha Kim, Ki-Sook Chung and Changsup Keum (ETRI, Korea)*
- P-2.94 An Approach to Predicting and Estimating Risks in terms of Tasks and Zones**  
*YouHee Choi, Jeong-Ho Park and Byungtae Jang (ETRI, Korea)*
- P-2.95 Design of Unidirectional Security Gateway System for Secure Monitoring of OPC-UA Data**  
*Byoung-Koo Kim, Young-Jun Heo and Jung-Chan Na (ETRI, Korea)*
- P-2.96 Deployment of an SDN-based UAV Network: Controller Placement and Tradeoff between Control Overhead and Delay**  
*Shams ur Rahman, Geon-Hwan Kim and You-Ze Cho (Kyungpook National University, Korea); Ajmal Khan (COMSATS Institute of Technology Attock, Pakistan)*
- P-2.97 Performance of a Waveform Design for Wireless Power Transfer with Imperfect Channel State**

## Information

*Luiggi Cantos, Gerardo Sacarello, Yeonjin Jeong and Yun Hee Kim (Kyung Hee University, Korea)*

### **P-2.98 System-Level Performance Evaluation for Non-Orthogonal Multiple Access in Coordinated Direct and Relay Transmission**

*Jung-Bin Kim and JunHwan Lee (ETRI, Korea); Dongwoo Kim and Yunsung Choi (Hanyang University, Korea)*

### **P-2.99 Self-certifying ID based Trustworthy Networking System for IoT Smart Service Domain**

*Eungha Kim, Kisook Chung and Taesoo Jeong (ETRI, Korea)*

**October 20(Friday), 2017**

## **[Session V-1] Advanced Wireless & Mobile Communication Systems and Infrastructure 3**

**Oct. 20, 08:30-10:10**

**Chair: Prof. Sangheon Pack (Korea University, Korea)**

### **V-1.1 A Modified Primary Sidelink Synchronization Signal for Vehicular-to-Vehicular Communications**

*Jooheum Yoon, Yeonjin Jeong, Gerardo Sacarello and Yun Hee Kim (Kyung Hee University, Korea)*

### **V-1.2 A Study of the Effect of IDTs and Input Signals on the Amplitude of Propagation Waves of the Passive SAW Structure**

*Nguyen Thu Ha, Phan Dang Hung and Hoang Si Hong (Hanoi University of Science and Technology, Vietnam); Nguyen The Truyen (Vietnam Research Institute of Electronics, Informatics and Automation, Vietnam)*

### **V-1.3 Proposal of Relay Type GPS using Many Mobile Terminals**

*Norifumi Murai and Takatoshi Sugiyama (Kogakuin University, Japan)*

### **V-1.4 Adaptive Borrow-Repay Resource Allocation on Disruptive Satellite Communication with PEP**

*Ji-Hoon Oh(Ajou University, Korea); Jong-Mu Kim(Samsung Electronics Co., Ltd., Korea); Jae-Hyun Kim (Ajou University, Korea)*

### **V-1.5 FLMF: Fractional Least Mean Fourth Algorithm for Channel Estimation in non-Gaussian Environment**

*Shujaat Khan (KAIST, Korea); Naveed Ahmed (Yonsei University, Korea); Muhammad Ammar Malik (Chosun University, Pakistan); Imran Naseem, Roberto Togneri and Mohammed Bennamoun (The University of Western Australia, Australia)*

## **[Session V-2] Smart Radio and Cognitive Radio**

**Oct. 20, 08:30-10:10**

**Chair: Prof. Do Young Kwak (KAIST, Korea)**

### **V-2.1 Reinforcement Learning for Dynamic Sensing Parameter Control in Cognitive Radio Systems**

*Sung-Jeen Jang and Sang-Jo Yoo (Inha University, Korea)*

### **V-2.2 Spectrum Sensing Utilizing Combination of Comb Filter and Autocorrelator in Cognitive Radio Systems**

*Mousumi Haque and Tetsuya Shimamura (Saitama University, Japan)*

### **V-2.3 A Blind Weighted MUSIC based Detection for Spatial Spectrum Sensing**

*Syed Sajjad Ali, Chang Liu, Jialong Liu and Minglu Jin (Dalian University of Technology, P.R. China); Sang-Jo Yoo and Jae Moug Kim (Inha University, Korea)*

### **V-2.4 Fuzzy C-means and Spatial Correlation based Clustering for Cooperative Spectrum Sensing**

*Dost Muhammad Saqib Bhatti, Bushra Shaikh and Syed Izhar Hussain Zaidi (Dawood University of Engineering and Technology Karachi, Pakistan)*

### **V-2.5 Performance Evaluation of LBT Spectrum Sharing via Modified Matérn Hardcore Point Process Type III**

*Guk-Hui Shin and Han-Kyul Park (Seoul National University of Science and Technology, Korea); Yunbae Kim and Seungkeun Park (ETRI, Korea); Taesoo Kwon (Seoul National University of Science and Technology, Korea)*

### **V-2.6 Probability-based Model for Unlicensed Spectrum Utilization in Cognitive Radio Networks**

*Ala Eldin Omer (American University of Sharjah, United Arab Emirates)*

## **[Session V-3] Vehicular Information and Communication Technologies 2**

**Oct. 20, 08:30-10:10**

**Chair: Dr. Minsu Shin (ETRI, Korea)**

### **V-3.1 Characterizing Driving Environments through Bluetooth Discovery**

*Walter Bronzi, Sébastien Faye, Raphael Frank and Thomas Engel (University of Luxemburg, Luxembourg)*

### **V-3.2 V2V Communication Modeling for Environmental Channel Throughput and Radio Propagation**

*Mohammed Abdulhakim Al-Absi (Dongseo University, Korea); Ahmed Abdulhakim Al-Absi (Kyungdong University, Korea); HoonJae Lee (Dongseo University, Korea)*

### V-3.3 Fast and Reliable Two-wheeler Detection Algorithm for Blind Spot Detection Systems

*Jang Woon Baek, Byung-Gil Han, Hyunwoo Kang and Yoonsu Chung (ETRI, Korea)*

### V-3.4 Vehicle to Vehicle Distance Estimation Using Camera based Visible Light Communications

*Vo Thi Bich Tram and Myungsik Yoo (Soongsil University, Korea)*

### V-3.5 Self-Adaptive Requirements for Intelligent Transportation System: A Case Study

*Irish Singh and Seok-Won Lee (Ajou University, Korea)*

## [Session V-4] 5G, 4G, LTE and LTE-Advanced 2

Oct. 20, 08:30-10:10

Chair: Prof. Daeyoung Park (Inha University, Korea)

### V-4.1 Random Access for Millimeter-Wave Cellular Systems with Directional Beams

*Mohammed Saquib Khan and Yong Soo Cho (Chung-Ang University, Korea)*

### V-4.2 Quasi-Gray Coding Scheme for a $(3 \times 2^{2m'+1})$ -ary QAM with Two-Time Dimensions

*Hyunhwa Lee, Jihoon Lee and Hae Chung (Kumoh National Institute of Technology, Korea); Liangping Ma, Byung K. Yi and Byung Keun Lim (InterDigital, USA)*

### V-4.3 LTE-M Adaptive eNodeB for Emergency Scenarios

*Ahmad Hani EL Fawal (ENSTA Bretagne & AUL University, Lebanon); Ali Mansour, Mohamad Najem, F. Le Roy and Denis Le Jeune (ENSTA Bretagne, France)*

### V-4.4 Transmit Antenna Selection in Massive MIMO Systems

*Daeyoung Park (Inha University, Korea)*

### V-4.5 Convolutional Codes for MGFDM System

*Shravan Kumar Bandari and Venkata Mani Vakamulla (National Institute of Technology Warangal, India); Anastasios Drosopoulos (TEI of Western Greece, Greece)*

## [Session V-5] Military and Defense Technologies

Oct. 20, 08:30-10:10

Chair: Prof. Sangjun Moon (UNIST, Korea)

### V-5.1 Deep Neural Network-based Blind Modulation Classification for Fading Channels

*JungHwan Lee, ByeoungDo Kim, Jaekyum Kim, Dongweon Yoon and Jun Won Choi (Hanyang University, Korea)*

### V-5.2 Intra-pulse Modulation Recognition using Pulse Description Words and Complex Waveforms

*Byungkoo Park and Jae Min Ahn (Chungnam National University, Korea)*

### V-5.3 Blind Detection of Interleaver Parameter using Error-less Symbols

*Youngkyun Jeon, Changryoul Choi and Dongweon Yoon (Hanyang University, Korea)*

### V-5.4 Low-profile Ferrite Loaded Conical Antenna

*Won Bin Park (Sungkyunkwan University, Korea); Yong Mi Park (ADD, Korea); Keum Cheol Hwang (Sungkyunkwan University, Korea)*

### V-5.5 Comparison of Methods for Parameter Estimation of Frequency Hopping Signals

*Nam-Kyoung Kim and Seong-Jun Oh (Korea University, Korea)*

## [Session VI-1] Artificial Intelligence and Machine Learning 2

Oct. 20, 10:30-12:10

Chair: Prof. Riri Fitri Sari (University of Indonesia, Indonesia)

### VI-1.1 Automatic Identification of Acacia Leaf Diseases in Plantation Forests using Wavelet Energy and Shannon Entropy

*Yeni Herdiyeni, Tri Setio Bakhtiar and Vektor Dewanto (Bogor Agricultural University, Indonesia); Budi Tjahjono, Bayo Alhusaeri Siregar and Leonardo S.S. Oliveira (Research and development PT.AraraAbadi, Indonesia)*

### VI-1.2 Sensor Faults Detection and Classification using SVM with Diverse Features

*Sana Ullah Jan and In Soo Koo (University of Ulsan, Korea)*

### VI-1.3 Recognition Model based on Residual Networks for Cursive Hanja Recognition

*Sangwon Lee and Gil-Jin Jang (Kyungpook National University, Korea)*

### VI-1.4 Artificial Companion Conversation Application for Android-based Robot

*Thi Thanh Nhan Le, Nam Tuan Le and Yeong Min Jang (Kookmin University, Korea)*

## [Session VI-2] WLAN, WPAN and WBAN

Oct. 20, 10:30-12:10

Chair: Dr. Seong-Soon Joo (ETRI, Korea)

### VI-2.1 Beacon Flooding Problem in High-density WLANs

*Hyunjoong Lee and Saewoong Bahk (Seoul National University, Korea)*

### VI-2.2 A Study on Adjusting EDCA Parameters of QoE-based Wireless LAN Base Station

*Kosuke Niwa and Yoshihiro Ito (Nagoya Institute of Technology, Japan)*

**VI-2.3 An Encounter-based Social Link Prediction Method using Bluetooth Traces**

*Thi-Nga Dao and Seokhoon Yoon (University of Ulsan, Korea)*

**VI-2.4 Comparative Study of Access Class Barring and Extended Access Barring for Machine Type Communications**

*Waqas Tariq Toor and Hu Jin (Hanyang University, Korea)*

**VI-2.5 QoS-based Interference Mitigation Scheme in Wireless Body Area Networks**

*Chan-Jae Lee and Jung-Ryun Lee (Chung-Ang University, Korea)*

**[Session VI-3] Internet of Things (IoT), Internet of Everything (IoE), Web of Objects (WoO)  
2**

Oct. 20, 10:30-12:10

Chair: Dr. JaeHwui Bae (ETRI, Korea)

**VI-3.1 Bridging OCF Devices to Legacy IoT Devices**

*Joo-Chul Lee and Hyoung-Jun Kim (ETRI, Korea); Sang-Ha Kim (Chung-Nam National University, Korea)*

**VI-3.2 Development of Internet of Things Indicators in Rwanda based on Stakeholder Analysis**

*Theodette Mukayisenga Kazenga, Jean Bonfils Tuyishimire, Aminata A. Garba, Martin Saint and Linda Deen (Carnegie Mellon University, Rwanda)*

**VI-3.3 A Data Streaming Performance Evaluation using Resource Constrained Edge Device**

*Hwejuo Lee, Junghyun Oh, Kyungrae Kim and Hunje Yeon (Samsung Electronics, Korea)*

**VI-3.4 Sensor-based Self-Organized Traffic Control at Intersections**

*Ajmal Khan, Farman Ullah and Zeeshan Kaleem (COMSATS Institute of Information Technology, Pakistan); Shams ur Rahman and You Ze Cho (Kyungpook National University, Korea)*

**[Session VI-4] Information & Communication Theory, and Their Applications 2**

Oct. 20, 10:30-12:10

Chair: Prof. Akio Tsuneda (Kumamoto University, Japan)

**VI-4.1 An Enhanced Polar Codec Design for High Reliable Train-to-Ground Communications**

*Chunxia Guo and Yan Yang (Beijing Jiaotong University, P.R. China)*

**VI-4.2 Generalized OFDM**

*Myungsup Kim and Do Young Kwak (KAIST, Korea)*

**VI-4.3 Clipping Method for Adaptive QRD-M Detection**

*Hyeongyong Lim, Gihong Park and Dongweon Yoon (Hanyang University, Korea)*

**VI-4.4 Secrecy Rate of Channel-Aware Randomized Secure Transmission Schemes in Multicarrier Systems**

*Jinho Choi (Gwangju Institute of Science and Technology (GIST), Korea)*

**VI-4.5 A Study on Super-Efficient Monte Carlo Integration Using One-Dimensional Chaotic Maps**

*Kentaro Fujitani and Akio Tsuneda (Kumamoto University, Japan)*

**[Session VI-5] SDN and Network Virtualization**

Oct. 20, 10:30-12:10

Chair: Mr. Taewan You (ETRI, Korea)

**VI-5.1 A Monitoring-based Load Balancing Scheme for Network Security Functions**

*Dongjin Hong, JinYong Kim, Daeyoung Hyun and Jaehoon (Paul) Jeong (Sungkyunkwan University, Korea)*

**VI-5.2 Advanced Controller Resiliency in Software-Defined Networking Enabled Critical Infrastructure Communications**

*Fabian Kurtz and Christian Wietfeld (TU Dortmund University, Germany)*

**VI-5.3 An RNS-based Forwarding Approach To Implement SFC**

*Mingyu ZHAO and Zhiyuan HU (Nokia Shanghai Bell Co., Ltd., China)*

**VI-5.4 Implementation of VNFC Monitoring Driver in the NFV Architecture**

*Hyunsik Yang, Briyone Mutichiro and Younghan Kim (Soongsil University, Korea)*

**VI-5.5 Multi-Agent Based Intrusion Prevention and Mitigation Architecture for Software Defined Networks**

*Varun Sharma (University of Delaware, USA)*