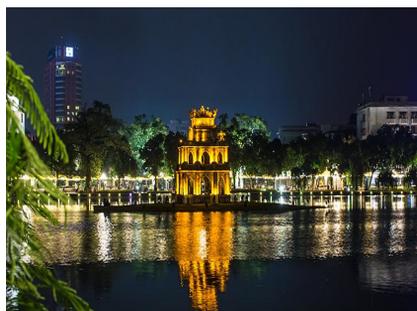




ICONI 



KOREAN SOCIETY FOR INTERNET INFORMATION

The 11th International Conference on Internet (ICONI 2019)

Dec. 15-18, 2019, Lotte Hotels & Resorts Hanoi, Vietnam
<http://www.iconi.org>

Conference Program

| Organized by |

Korean Society for Internet Information (KSII)

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Message from Honorary Chair

We express our warm welcome to all of attendants of the 11th International Conference on Internet (ICONI) that will be held from December 15~18, 2019, in the Lotte Hotels & Resorts, Hanoi, Vietnam.

Over the past 11 years, ICONI has increased its academic impact and influence in the area of Information Science, Computer Engineering and Internet Technology by bringing together international researchers from academia, industry, and government to exchange novel ideas, explore enabling technologies, discuss innovative designs, and share field trial experiences and lessons learned.

This year, ICONI 2019 again covers broad range of topics which are related with Internet technologies and applications such as Wireless and Sensor Network, Security & Privacy and Multimedia, Image Processing, Intelligent Systems and mobile computing, Internet of Things, wireless communications. It is firmly believed that each paper to be presented will be a basis for further constructive discussion.

We would like to express our heartfelt gratitude to every one who makes this conference successful. First of all, we are so grateful to all contributors who submit their valuable papers, review the papers, and chair the sessions. We also thank many sponsors for their enormous support. Our special thanks must go to the Keynote Speakers, Prof. Le Hoang Son from Vietnam National University, Vietnam and Prof. Hieu from Hanoi Medical University Hospital, Vietnam

Last, but not least, we deeply appreciate limitless devotion of Organizing Committee members. Without their contribution, this conference would not be realized.

We truly welcome you all to this beautiful country and wish you pleasant and joyous stay in Vietnam!



Dr. Mingoo Kang
Hanshin University,
Rep. of Korea

Dr. Mingoo Kang
Honorary Chair of ICONI 2019

Message from Conference Chairs

On behalf of the organizing committee of ICONI 2019 and on our own behalf, we welcome you to the 11th International Conference on Internet (ICONI) and to Hanoi, Vietnam. We would like to extend a special welcome to new participants also as it is their first time attending this remarkable international conference. It is our sincere hope that we shall be seeing more of you in future ICONI meetings.

As many of you have witnessed, ICONI has continued its growth since its inception. The amount of interest towards the Internet is never decreasing among both the international academic and practitioners' communities. This year, our conference has attracted more than 145 papers in the 18 Internet-related areas including Mobile Internet Computing, Internet Security, Internet of Things (IoT), and Wireless & Sensor Network and Multimedia, Image Processing and Management of Internet Applications. Topics covered in ICONI 2019 truly represent the comprehensiveness of this conference. We are sure that ICONI 2019 will provide you with a wealth of information and many opportunities for future discussion.

We owe a great amount of gratitude to the organizing committee members and all contributors for the extraordinary work they have done in organizing this conference.

We wish you all a very pleasant time here in Vietnam and a productive and successful conference.



Dr. Min Hong
SoonChunHyang Univ.,
Rep. of Korea



Dr. Do Nang Toan
Vietnam National Univ.,
Hanoi, Vietnam

Dr. Min Hong Dr. Do Nang Toan
Conference Chair & Co-Chair of ICONI 2019

Message from Program Chairs

It is a pleasure to welcome you to the 11th International Conference on Internet, 2019 (ICONI 2019) to be held in the Lotte Hotel & Resorts, Hanoi, Vietnam

Over the past 11 years, ICONI has grown to be the major international conference in Internet Technology area. The conference is organized as a set of 18 tracks in the Internet Technology area. ICONI continues the endeavor of high-quality, broad international participation in all areas of Internet Technology.

The successful organization of ICONI has required the talents, dedication and time of many volunteers from Philippines, USA, Vietnam, Pakistan, Nepal, Thailand, Australia, Cambodia, Bulgaria and Rep. of Korea. Special gratitude and appreciation go to all of organizing committee members as they are primarily responsible for the conference.

We hope that you will find the conference both enjoyable and valuable, and also enjoy the architectural, cultural and natural beauty of Vietnam.

Hanoi is one of the most popular tourist destinations in Vietnam and well situated for welcoming the ICONI 2019 participants from around the world.



Dr. Jin Kwak
Ajou Univ., ROK



Dr. Moonseong Kim
Seoul Theological Univ., ROK



Dr. Imran Ghani
Indiana Univ. of
Pennsylvania, USA



Dr. Le Hoang Son
Vietnam National Univ.,
Hanoi, Vietnam



Dr. Xibin Jia
Beijing Univ. of
Technology, China

Dr. Jin Kwak Dr. Moonseong Kim Dr. Imran Ghani
Dr. Le Hoang Son Dr. Xibin Jia
Program Chairs of ICONI 2019

Keynote Speakers

Keynote Speaker Prof. Nguyen Lan Hieu

Hanoi Medical University Hospital, Vietnam

Member of the 14th National Assembly of Vietnam for the term of 2016-2021



Title: State-of-the-art in healthcare digital transformation in Vietnam

Abstract of the talk

Vietnam is considered as one of the most dynamic growth countries in medical equipment as well as the medical service industry at APAC. Business Monitor International (BMI) has reported that Vietnam's healthcare costs are estimated at \$ 16.1 billion: 2017, equal to 7.5% of GDP. It also forecasts spending on health will increase to \$ 22.7 billion by 2021.

- Recently, many renovations and constructions of hospitals and new construction have been carried out. Although Vietnam has many famous and talented doctors, the number of patients going abroad to seek medical treatment is increasing. The reason is poor health facilities and poor service for local patients. In 2018, \$ 2 billion was spent on medical treatment abroad.

- The Government of Vietnam is now investing heavily to improve health care standards. Healthcare digital transformation is most focused. Digital healthcare transformation in Vietnam share common challenges:

- Data management
- Hospital security in regard to equipment theft
- Patient centric
- Optimizing operating costs
- Comprehensive connection
- Digital solutions would be a great way to provide medical professional services
- A smart medical model
- A medical ecosystem with synchronized data

Keynote Speakers

Keynote Speaker Dr. Le Hoang Son

**VNU Information Technology Institute,
Vietnam National University, Hanoi**

**Title: Fuzzy Computing for Energy-Aware Routing in
Wireless Sensor Networks**



Abstract of the talk

Wireless Sensor Network (WSN) contains tiny sensor nodes which have the capability of sensing environment, store and transmit data. Normally, sensor nodes have limited resources like energy, computing power and sensing area coverage. In wider regions, a sensor network must have a large collection of sensor nodes to improve its reliable robust wide coverage. Each sensor node's energy is consumed by wireless communication among nodes in the network. Energy is the significant reflection to enlarge the lifetime of networks. In this talk, we will present latest results regarding Fuzzy Computing applied for Energy-Aware Routing in Wireless Sensor Networks. Specially, Fuzzy Clustering for 3D Wireless Sensor Networks will be presented accompanied with some variants made by Evolutionary Fuzzy Clustering, Energy-balanced unequal fuzzy clustering, and Probability-based Fuzzy Multipath Routing. This talk aims to emphasize the role of Fuzzy Computing in the Internet society nowadays.

Keynote Speaker Dr. Bobby Gerardo

**Professor VI, College of ICT,
West Visayas State University, Philippines**

**Title: Implementation of ICT based on Enhanced Charging Mechanism
Algorithm For Better Electric Vehicle Performance and Agricultural Yields**



Abstract of the talk

Current issues in the performance of electric vehicles with solar panels would cover stability and spontaneity of sunlight. In other case, energy could be harvested by the Photo Voltaic (PV) cells attached on top of the electric or autonomous vehicle, that may lead to erratic and inefficient charging. This research, devised a mechanism that would efficiently decide the charging method to employ based on the amount of sunlight and the current state of charge so that the machine could be maximized in the agricultural field. The main goal of this paper is to develop a regression model incorporating the attributes into the equation, and to efficiently decide on appropriate charging algorithm. The model was generated and it comes along with error measures as basis to determine whether the model is acceptable or not. A smaller error value will indicate better model.

A simulation was performed and the implementation time was also captured and indicates that the program implementation performance is better, which in this case showed acceptable rendition time. These results could be used for calibrating the charging device for electric/solar vehicle, thus optimizing the amount of energy harvested from the solar panels. This will imply maximization of power of the electric vehicle and could be used to optimize energy of such ubiquitous vehicle for enhancing crops production in agriculture.

Organizing Committee

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Mingoo Kang, Hanshin University, Rep. of Korea

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Do Nang Toan, Vietnam National University, Vietnam

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Imran Ghani, Indiana University of Pennsylvania, USA

Xibin Jia, Beijing university of technology, China

Moonseong Kim, Seoul Theological University, Rep. of Korea

Le Hoang Son, Vietnam National University, Vietnam

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Hoang Viet Long, People Police University of Technology and Logistics, Vietnam

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| International Program Committee |

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YongJin Kwon, Korea Aerospace University, Rep. of Korea

Xiaoli Li, Beijing university of technology, China

Junho Ahn, Korea National University of Transportation, Rep. of Korea

Jyotir Moy Chatterjee, Asia Pacific University of Technology & Innovation, Nepal

Woochan Lee, Incheon National University, Rep. of Korea

Manpyo Hong, Ajou University, Rep. of Korea

Conference Program

Sun / Dec. 15, 2019	Room 1
16:00-18:00	VIP Reception & Greeting

Mon / Dec. 16, 2019	Room 1 (Emerald)	Room 2 (Charlotte A)	Room 3 (Charlotte B)
08:00-	Registration		
08:30-10:00	Session 1	Session 2	Session 3
10:10-11:00	Opening Ceremony / Keynote Speeches		
11:10-12:40	Session 4	Session 5	Session 6
12:40-13:50	Lunch (12:00-14:00)		
14:00-15:30	Session 7	Session 8	Session 9
15:40-17:20	Session 10	Session 11	Session 12
18:00-19:30	Award Ceremony / Banquet		

Conference Program

Dec. 17, 2019	Room 1 (Charlotte A)	Room 2 (Charlotte B)
08:00-	Registration	
08:30-10:00	Session 13	Session 14
10:10-11:40	Session 15	Session 16
13:00-14:30	Session 17	Session 18

Dec. 18, 2019	Room
09:00-11:00	Visit the Hanoi Univ. of Science & Technology
13:00-14:00	Panel Discussion: Collaborative Research

*** Presentation Time**

- **Oral Session: 10 minutes Presentation / 5 minutes Q&A**

Conference Program

Sun, Dec. 15, 2019

16:00-18:00

VIP Reception & Greetings

Mon, Dec. 16, 2019

08:30-10:00

Session 1: Smart Phone Applications and Service /
Mobile Internet Computing

Session 2: Multimedia/Image Processing / HCI /
Intelligent Systems

Session 3: Knowledge Engineering and Applications &
Scientific Computing Platform and Applications

10:10-11:00

Opening Ceremony / Keynote Speeches

Dr. Nguyen Lan Hieu

/ Hanoi Medical University Hospital, Vietnam

*Dr. Le Hoang Son / VNU Information Technology Institute,
Vietnam National University, Hanoi*

11:10-12:40

Session 4: Wireless and Sensor Network / Security &
Privacy in Internet

Session 5: Wireless and Sensor Network / Security &
Privacy in Internet

Session 6: Interactive Presentation Session I

Conference Program

Mon, Dec. 16, 2019

12:40-13:50	Lunch (12:00 ~ 14:00)
14:00-15:30	Session 7: Multimedia / Image Processing /HCI / Intelligent Systems
	Session 8 : Multimedia / Image Processing /HCI / Intelligent Systems
	Session 9: Knowledge Engineering and Applications & Scientific Computing Platform and Applications & Smart Rehabilitation & Wellness Technology
15:40-17:20	Session10: Database / Data Mining / Big Data / Mobile Object Database & Management of Internet Application/E-Business/E-Commerce & Future Internet & Industrial Convergence Service & Future Information Security
	Session11: Database / Data Mining / Big Data / Mobile Object Database
	Session12: : Interactive Presentation Session II
18:00-19:30	Award Ceremony / Banquet Dr. Bobby D. Gerardo <i>/ West Visayas State University, Philippines</i>

Conference Program

Tue, Dec. 17, 2019

08:30-10:00	Session 13 : Software Engineering & Architecture / Cloud Computing & Smart Computing Services and Applications
	Session 14 : Software Engineering & Architecture / Cloud Computing & Smart Computing Services and Applications
10:10-12:40	Session 15 : KETI WS session
	Session 16 : KETI WS Interactive Presentation Session I
13:00-14:30	Session 17 : IoT (Internet of Things) / Machine to Machine & Management of Internet Application/E-Business/E-Commerce & Future Information Security
	Session 18 : KETI WS Interactive Presentation Session II & Interactive Presentation Session III

Wed, Dec. 18, 2019

10:00-11:30	Visit the Hanoi Univ. of Science & Technology
13:00-14:30	Panel Discussion: Collaboration Between

Conference Program

| 08:30-10:00, Mon, Dec.16, 2019 |

Session 1: Smart Phone Applications and Service / Mobile Internet Computing (Room 1)

08:30-10:00, Mon, Dec. 16, 2019

Chair: Dr. Jong Suk Ruth Lee
(KISTI, ROK)

1-1	Mobility-Aware Service Migration (MASM): An Edge Cloud Service Migration Algorithm for Seamless Mobility
	Haziq Hamzah, Duc-Tai Le (Sungkyunkwan Univ., ROK), Moonseong Kim (Seoul Theological Univ., ROK), Hyunseung Choo (Sungkyunkwan Univ., ROK)
1-2	Effects of Shoe Heel Types on Knee Joint Angle During Gait in Healthy Young Women - A Preliminary Study
	Vantha Chhoeum, Changwon Wang, Seungwan Jang, Se Dong Min, Young Kim (Soonchunhyang Univ., ROK), Min-Hyung Choi (Univ. of Colorado at Denver, USA)
1-3	Transfer Learning: A Practical Approach to Android Malware Classification
	Long Nguyen-Vu, Souhwan Jung (Soongsil Univ., ROK)
1-4	Automatic Generation of MAEC Standards for Android Malware Threat Intelligence
	Jungsoo Park, Nguyen Vu Long (Soongsil Univ., ROK), George Bencivengo (GINIA Inc, Washington DC, USA), Souhwan Jung (Soongsil Univ., ROK)
1-5	"The Doctor Knows You": A Telemedicine System to bring medical services to rural and remote villages in Thailand
	Sirikasem Sirilak, Songsak Thongsanit, Roy Morien (Naresuan Univ., Thailand)
1-6	Event-based Traffic Monitoring Architecture for Detecting Click-fraud Applications
	Hae-Seon Jeong, Jin Kwak (Ajou Univ., ROK)

Conference Program

| 08:30-10:00, Mon, Dec.16, 2019 |

Session 2: Multimedia/Image Processing / HCI / Intelligent Systems (Room 2)

08:30-10:00, Mon, Dec. 16, 2019

Chair: Prof. Nguyen Thi Thuy
(VNUA, Vietnam)

2-1	A Reviews of a Leader's Voice Traits and Members' Cognitions: The Relationship between Leader's Voice and Trust
	Sangwoo Hahm, Hyungwoo Park (Soongsil Univ., ROK)
2-2	Understanding the acceptance of subscription-based online services
	Dong Hyuk Jo (Soongsil Univ., ROK)
2-3	Unusual Indoor Event Detection System using Vision, Audio, and Activity Sensors
	Ju Ho Jung, Siwon Kim, Ryumduk Oh (Korea National Univ. of Transportation, ROK), Heungseok Jeon (Konkuk Univ., ROK), Junho Ahn (Korea National Univ. of Transportation, ROK)
2-4	Human Pose Estimation Analysis
	Beanbonyka Rim, Nak-Jun Sung (Soonchunhyang Univ., ROK), Yoo-Joo Choi (Seoul Media Institute of Tech, ROK), Min Hong (Soonchunhyang Univ., ROK)
2-5	Unreal Shadow Dataset Creating Program Using Unity3D
	Kang Jik Kim, Junchul Chun (Kyonggi Univ., ROK)
2-6	Motivation-based Agent Story Generation System
	Soo Kyun Kim (Pai Chai Univ., ROK), Shin Jin Kang (Hongik Univ., ROK), Jong In Choi (Seoul Women's Univ., ROK)

Conference Program

| 08:30-10:00, Mon, Dec.16, 2019 |

Session 3: Knowledge Engineering and Applications & Scientific Computing Platform and Applications (Room 3)

08:30-10:00, Mon, Dec. 16, 2019

Chair: Prof. Do Nang Toan
(Vietnam National Univ., Hanoi, Vietnam)

3-1	Determinants of Participation in Technological Strategic Alliances
	YoungJun Kim (Korea Univ., ROK)
3-2	A Study of Derivation of Core Technology Factors for the Evaluation of Technology Level of Computational Science Data Platform
	Hanbichnale Jang, Noo Ri On, Nam-Gyu Kim, Jong Suk Ruth Lee (KISTI, ROK)
3-3	A New Entropy of Dynamical Systems in Complex Intuitionistic Fuzzy Environment
	Roan Thi Ngan (Hanoi Univ. of Natural Resources & Environment, Vietnam), Le Hoang Son (Vietnam National Univ., Vietnam), Bui Cong Cuong (Institute of Mathematics, Vietnam)
3-4	Technology Measurement for High-Performance Computers using Gordon's Scoring Model
	Nam-Gyu Kim, Noo Ri On, Myoung-Ju Koh, Hanbichnale Jang, Jong Suk Ruth Lee (KISTI, ROK)
3-5	Developing a Cost Data Structure for Implementing Advance Work Package Concepts
	Donghee Kim, Minhui Ha, Jaehyun Choi (Korea Univ. of Technology & Education, ROK)
3-6	Design of a Survey for the High Performance Computing Policy in Korea
	Myoung-Ju Koh, Namgyu Kim, Noori On, Taesang Huh (KISTI, ROK)
3-7	Identifying Polarity of Twitter Sentiments using traditional Knowledge Engineering Algorithms
	Maha Agro, Fiza Azam, Isma Farah Siddiqui (Mehran Univ. of Engineering and Technology, Pakistan)

Conference Program

| 11:10-12:40, Mon, Dec.16, 2019 |

Session 4: Wireless and Sensor Network / Security & Privacy in Internet (Room 1)

11:10-12:40, Mon, Dec. 16, 2019

Chair: Dr. Le Hoang Son
(Vietnam National Univ., Hanoi, Vietnam)

4-1	Optimal UAV Vertical Velocity for FSO Backhaul Network Performance
	Wonsik Yang, Jong-Moon Chung (Yonsei Univ., ROK)
4-2	Threat models on Google SafetyNet for Android application protection in real world
	Thien-Phuc Doan, Jungsoo Park, Souhwan Jung (Soongsil Univ., ROK)
4-3	Success Rate-Aware Adaptive Relocation Scheme for Hopping Sensors
	Moonseong Kim (Seoul Theological Univ., ROK), Sooyeon Park, Woochan Lee (Incheon National Univ., ROK)
4-4	Secure key recovery system using PPSS in permissioned blockchain
	ChangHyun Roh, Ju-Seong Hwang, Im-Yeong Lee (Soonchunhyang Univ., ROK)
4-5	UAV Assisted Network Schemes for Urban Areas and IoV
	Seungwoo Seo, Jong-Moon Chung (Yonsei Univ., ROK)
4-6	Abnormal Behavior Detection in Endpoint Environment
	Sujeong Kim, Hongbi Kim, Taejin Lee (Hoseo Univ., ROK)
4-7	Monitoring heart activity using continuous wave radar and short-time chirp Z-transform
	Hui-Sup Cho, Young-Jin Park (DGIST, ROK)
4-8	Multicast Uplink Data Transmission in LPWA Networks
	Youngchan Lee, SoYeon Lee (Daegu Catholic Univ., ROK), Seokhoon Kim (Soonchunhyang Univ., ROK), SoYeon Lee, Dae-Young Kim (Daegu Catholic Univ., ROK)

Conference Program

| 11:10-12:40, Mon, Dec.16, 2019 |

**Session 5: Wireless and Sensor Network / Security & Privacy in Internet
(Room 2)**

11:10-12:40, Mon, Dec. 16, 2019

**Chair: Dr. Xibin Jia
(Beijing Univ. of Technology, China)**

5-1	Wet fingerprint classification using Deep Learning approach
	Junseob Kim, Beanbonyka Rim, Nak-Jun Sung, Min Hong (Soonchunhyang Univ., ROK)
5-2	Towards a New Ultra-High-Speed Search Algorithm for Convolutional Neural Networks
	Chakkrit Termritthikun, Yeshi Jamtsho (Naresuan Univ., Thailand), Ivan Lee (Univ. of South Australia, Australia), Roy Morien, Paisarn Muneesawang (Naresuan Univ., Thailand)
5-3	Differences of Image to Image Translation According to Various U-Nets
	Sohyun Lim, Junchul Chun (Kyonggi Univ., ROK)
5-4	Classifying Animal Sounds using Multi-Feature Network
	Chung-II Kim, Yongjang Cho, Seungwon Jung, Jehyeok Rew, Eenjun Hwang (Korea Univ., ROK)
5-5	AVC/HEVC on Hardware and Software for Advancing Video Streaming System
	Tuan Thanh Le (Gachon Univ., ROK), Eun-Seok Ryu (Sungkyunkwan Univ., ROK)
5-6	Facial Expression Recognition using Multiple Deep Learning Methods
	Sin Woo Lee, In Seop Na (Chosun Univ., ROK)
5-7	A study on smart ordering system for textile industry based on CNN
	Palash Sontakke, Chang Soo Kim (Pukyong National Univ., ROK), Il-Kyeun Ra (Univ. of Colorado at Denver, USA)
5-8	Design of Bandwidth-Efficient Transmission Method for User View-oriented Multi-view Video Services
	Minjae Seo, Jong Ho Paik (Seoul Women's Univ., ROK)

Conference Program

| 11:10-12:40, Mon, Dec.16, 2019 |

Session 6: Interactive Presentation Session I

(Room 3)

11:10-12:40, Mon, Dec. 16, 2019

Chair: Dr. Kwanghoon Pin Kim

(Kyonggi Univ., ROK)

6-1	OCR Based Webtoon Infringement Site Detection Technology
	Eui-Jin Kim, Seul-Ki Choi, Jin Kwak (Ajou Univ., ROK)
6-2	K-mean Clustering Algorithm for Improving Real-time Communication based on Priority Queue
	Sa Math, Prohim Tam (Soonchunhyang Univ., ROK), Jin Wang, Wenbing Wu, Yongsong Zou (Changsha Univ. of Science & Technology, China), Zilong Jin (Nanjing Univ. of Information Science and Technology, China), Seokhoon Kim (Soonchunhyang Univ., ROK)
6-3	Deep Learning-based Bladder Cancer Image Analysis
	Hyunjong Kim, Dongik Oh (Soonchunhyang Univ., ROK)
6-4	Study on open IoT service platform for Interaction Device of IoT Service
	Jiyong Lim, Sanghyun Park, Hyosang Lee, Hochul Kim, Amsuk Oh (Tongmyong Univ., ROK)
6-5	Analysis of Security Threats and Countermeasures in Connected Car Commerce Service
	Minkyung Lee, JeongSeok Jo (Ajou Univ., ROK), Sungyoung Ryu (Soonchunhyang Univ., ROK), JIN KWAK (Ajou Univ., ROK)
6-6	Cost-Effective Surveillance System using Microphone Array
	HyungWoo Park (Soongsil Univ., ROK), James Mu (Kampuchea Thmey Daily, Cambodia, USA), Hyungbae Park (Univ. of Central Missouri, USA)
6-7	Comparison of Gradient Tree Boosting and SVM for prediction textile industry trend
	Se Hun Jeong, Min Seong Kim, Chang Soo Kim (Pukyong National Univ., ROK)

Conference Program

| 11:10-12:40, Mon, Dec.16, 2019 |

Session 6: Interactive Presentation Session I

(Room 3)

11:10-12:40, Mon, Dec. 16, 2019

Chair: Dr. Kwanghoon Pin Kim

(Kyonggi Univ., ROK)

6-8	Classification of User Applications for Future Network Slicing Based on decision Tree Algorithm
	Prohim Tam, Sa Math, Seokhoon Kim (Soonchunhyang Univ., ROK)
6-9	The Effect of Business Models on Technology Commercialization Performance
	DongHyuk Jo (Soongsil Univ., ROK)
6-10	IoT Ontology on OneM2M Base Ontology accelerate dynamic chatbot services
	Jinsoo Kim, KangYoon Lee (Gachon Univ., ROK)
6-11	High-Speed Search Technology based on Ssdeep
	Younhjoon Lee, Junho Hwang, Taejin Lee (Hoseo Univ.,ROK)
6-12	Patent Application Trend on Foreign Object Detection for Wireless Power Transfer of Electric Vehicle
	Woochan Lee (Incheon National Univ., ROK), Moonseong Kim (Seoul Theological Univ., ROK)
6-13	Deep Learning Approach for Emergency Detection using Vital Sign
	Nak-Jun Sung, Chhoeum Vantha, Se Dong Min, Min Hong (Soonchunyang Univ., ROK)
6-14	The Load-Balancing Computing Based On SDN/NFV to Handle 5G Backhaul Gateway Network Condition for Improving QoS
	Sa Math, Prohim Tam (Soonchunhyang Univ., ROK), Jin Wang, Wenbing Wu, Yongsong Zou (Changsha Univ. of Science & Technology, China), Zilong Jin (Nanjing Univ. of Information Science and Technology, China), Seokhoon Kim (Soonchunhyang Univ., ROK)

Conference Program

| 14:00-15:30, Mon, Dec.16, 2019 |

Session 7: Multimedia / Image Processing / HCI / Intelligent Systems (Room 1)

14:00-15:30, Mon, Dec. 16, 2019

Chair: Prof. Le Thi Lan, MICA
(HUST, Vietnam)

	Gesture recognition based on Motion History Image and CNN
7-1	Youjin Koh, In-Jae Jo (Seoul Media Institute of Technology, ROK), Min Hong (Soonchunhyang Univ., ROK), Yoo-Joo Choi (Seoul Media Institute of Technology, ROK)
	Sample-Efficient with Monte Carlo and Temporal Difference Balance in Reinforcement Learning
7-2	ChaYoung Kim (Kyonggi Univ. ROK), Seohee Park (KT, ROK), Woosik Lee (SSiS, ROK), Hye-young Kim (Hongik Univ., ROK)
	The Effect of Service Quality on Customer Satisfaction and Continuous Usage intention
7-3	Hugo Guimarães Mariano, Dong Hyuk Jo, Chul Hwan Kwon (Soongsil Univ., ROK)
	Shadow Detection Network with Channel Attention Module
7-4	Heejin Yoon, Junchul Chun (Kyonggi Univ., ROK)
	Study on Sound Improvement of Flat Panel Display Exciter Speaker by Multi-Channel Speaker System
7-5	Hyungwoo Park (Soongsil Univ., ROK), Sungtae Lee, Kwanho Park (LG Display, ROK)
	Text-driven Speech Animation with Emotional Expressions
7-6	Wonseok Chae (ETRI, ROK), Jungjin Park (Hanyang Univ., ROK), Soo-Myung Park, Hyung-Keun Jee (ETRI, ROK), Yejin Kim (Hongik Univ., ROK)
	Determinants of Continuance Intention in Mobile Payment Services
7-7	Viyada Itthiphone, Dong Hyuk Jo, Chul Hwan Kwon (Soongsil Univ., ROK)
	Cross-media Sentiment Analysis Based on Dual Channels
7-8	Xibin Jia, Xun An (Beijing Univ. of Technology, China)

Conference Program

| 14:00-15:30, Mon, Dec.16, 2019 |

Session 8: Multimedia / Image Processing /HCI / Intelligent Systems (Room 2)

14:00-15:30, Mon, Dec. 16, 2019

Chair: Dr. Chakkrit Termitthikun
(Naresuan Univ., Thailand)

8-1	Improved Static Analysis Application for Ransomware Detection on Android
	So-Hee Park, Jin Kwak (Ajou Univ., ROK)
8-2	Energy Consumption Minimization of Moving UAVs with Delay Constraints for UAV-based FSO Vertical Networks
	Wonsuk Yoo, Jong-Moon Chung (Yonsei Univ., ROK)
8-3	High Availability Multi-Agent Key Recovery System Using Signcryption Scheme
	TaeHoon KIM, Hak-Yong Kim, Im-Yeong Lee (Soonchunhyang Univ., ROK)
8-4	Invasion of privacy through faces exposed to the media; YouTube
	Semi Park, Junhyoung Oh, Hyunsik Yoon, Chaeun Lee, Chaewoon Kim, Kyungho Lee (Korea Univ., ROK)
8-5	Analysis Method Study on Android malicious app equipped with anti-analysis technology
	Seokhun Lee, Jae-Cheol Ryou (Chungnam National Univ., ROK)
8-6	A Study on the Search Technique of Similar Posts Based on Simhash
	JiHee Ha, Chanung Hwang, Taejin Lee (Hoseo Univ., ROK)
8-7	Optimal UAV trajectory planning for urban multiple Wi-Fi structure coverage
	Youngho Kwon, Woongjae Lee, Yoojin Jang, June Hwang (Seoul Women's Univ., ROK)

Conference Program

| 14:00-15:30, Mon, Dec.16, 2019 |

Session 9: Knowledge Engineering and Applications & Scientific Computing Platform and Applications & Smart Rehabilitation & Wellness Technology

(Room 3)

14:00-15:30, Mon, Dec. 16, 2019

Chair: Dr. Roy Morien

(Naresuan Univ., Thailand)

9-1	A New Approach of Picture Fuzzy Sets integrated with TOPSIS model for Group Decision Making in Evaluation under Uncertainty
	Hai Pham Van, Long Kim Cu (Hanoi Univ. of Science and Technology, Vietnam)
9-2	EDISON Simulation Linked Competition Platform Construction and Service
	Yejin Kwon, Noori On, Inho Jeon, Jerry H. Seo, Jongsuk R. Lee (KISTI, ROK)
9-3	Knowledge-based Project Management System (KPMS) for Industrial Construction Projects
	Minhui Ha, Donghee Kim, Jaehyun Choi (Korea Univ. of Technology & Education, ROK)
9-4	Lessons from HPC course by Government sponsored Research Institutes in Korea
	Eunha Lee, Jung Seung Wha, Hae Jin Kang, Mijoo Yang, Sunggeun Han (KISTI, ROK)
9-5	History and trends of Data Education in Korea - KISTI Data Education Based on Statistics in 2001 ~ 2019
	Jaehong Min, Jaewoo Do, Jaegwang Lee, Jaesung Kim, Buyoung Ahn (KISTI, ROK)
9-6	A Knowledge Engineering Approach for Gaming Big Data Analytics using Orient Database Framework
	Pir Hamid Ali Qureshi, Isma Farah Siddiqui (Mehran Univ. of Engineering and Technology, Pakistan)
9-7	A Web-based 3D Molecular Orbital Visualizer based on Computational Science Platform
	Inho Jeon, Noo Ri On, Yejin Kwon, Huiseung Chae, Jerry H. Seo, Jong Suk Ruth Lee (KISTI, ROK)
9-8	An Effects on Users Perceived usefulness and Ease of Computational Science Platform on User Satisfaction
	Noo Ri On, Nam-Gyu Kim, Hanbichnale Jang, Jong Suk Ruth Lee (KISTI, ROK)

Conference Program

| 15:40-17:20, Mon, Dec.16, 2019 |

Session 10: Database / Data Mining / Big Data / Mobile Object Database & Management of Internet Application/E-Business/E-Commerce & Future Internet & Industrial Convergence Service & Future Information Security

(Room 1)

15:40-17:20, Mon, Dec. 16, 2019

**Chair: Dr. Seokhoon Kim
(Soonchunhyang Univ., ROK)**

10-1	Study of Prediction Research Regarding Smart Office Using Scenario Analysis
	Ho Seok Lee, Bong Gyou Lee (Yonsei Univ., ROK)
10-2	System for Analyzing Pirated Content Distribution Channel
	Deuk-Hun Kim, Jin Kwak (Ajou Univ., ROK)
10-3	Blockchain-based Training Dataset Marketplace
	Yustus Eko Oktian, Sang-Gon Lee (Dongseo Univ., ROK)
10-4	Selective-Verification Zero-knowledge proofs in Blockchain
	Hyeokjin Kim, Junhoo Park, Geunyoung Kim, Jaecheol Ryou (Chungnam National Univ., ROK)
10-5	A security consideration on ARM operational modes: Normal mode and HYP mode
	Hoang Nguyen Huy, Jaehyeon Yoon, Tu Chau Ngoc, Souhwan Jung (Soongsil Univ., ROK)
10-6	Rating Prediction using Deep Learning and Spark
	Monika Mishra (California State Univ., Los Angeles, USA), Min-Goo Kang (Hanshin Univ., ROK), Jongwook Woo (California State Univ., Los Angeles, USA)

Conference Program

| 15:40-17:20, Mon, Dec.16, 2019 |

**Session 11: Database / Data Mining / Big Data / Mobile Object Database
(Room 2)**

Chair: Dr. Vu Viet Vu

15:40-17:20, Mon, Dec. 16, 2019

(Vietnam National Univ., Hanoi Vietnam)

11-1	Multi-Scale Feature Fusion CNN for Time Series Classification in Smart Factory
	Xiaorui Shao, Chang Soo Kim (Pukyong National Univ., ROK), Dae Geun Kim (Dyotec Busan, ROK)
11-2	CNN and RNN models for predicting particulate matter in South Korea
	Guang Yang, Thanongsak Xayasouk, HwaMin Lee (Soonchunhyang Univ., ROK)
11-3	NLP BASED SERVICE RECOMMENDATION SYSTEM
	Uroosa Shaikh, Isma Farah Siddiqui, Qasim Ali Arain, Sorath Buriro, Nasreen Babar (Mehran Univ. of Engineering and Technology, Pakistan)
11-4	Mining Process-Aware Malware Behaviors from Computer's Operational Event Logs
	Dinh-Lam Pham, Hyun Ahn, Kyoungsook Kim, Kwanghoon Kim (Kyonggi Univ., ROK)
11-5	Application of Picture fuzzy clustering and Picture fuzzy rules: Dental Images Analysis for pathology diagnosis
	Phan Bao Hung (Hanoi Univ. of Science and Technology, Vietnam), Pham Huy Thong (Vietnam National Univ., Vietnam), Pham Van Hai (Hanoi University of Science Technology, Vietnam), Son Le Hoang Son (Vietnam National Univ., Vietnam)
11-6	Predicting Remaining Time of Process-Instance Based on LSTM Neural Network
	Seonghun Ham, Hyun Ahn, Kwanghoon Kim (Kyonggi Univ., ROK)
11-7	Analyzing Smart Office Technology Trends Using IPC Code Analysis & Topic Modeling
	Hye In Jo (Yonsei Univ., ROK), Jin Woo Kim (NHN diquest, ROK), Jong In Jeong, Hyun Jun Song (Seoul Cyber Univ., ROK), Bong Gyou Lee (Yonsei Univ., ROK)
11-8	A Study on the Effects of Leader's Social Responsibility and Transparency of Information Disclosure on Organizational Commitment through Trust in Leaders
	Kundong Choi, Hyungwoo Park, Sangwoo Hahm (Soongsil Univ., ROK)

Conference Program

| 15:40-17:20, Mon, Dec.16, 2019 |

Session 12: Interactive Presentation Session II (Room 3)

15:40-17:20, Mon, Dec. 16, 2019

Chair: Dr. Jongwook Woo
(California State Univ., Los Angeles, USA)

12-1	Strategic Approach to Improving Corporate Flexibility, Improving Performance, Sharing Information and Creativity through Internet-based Office Operations
	Sangwoo Hahm, Hyungwoo Park (Soongsil Univ., ROK)
12-2	Comparing Process Discovery Techniques: Complexity Metrics and Measurements
	Hyun Ahn, Dinh-Lam Pham (Kyonggi Univ., ROK), Minjae Park (Daelim Univ., ROK), Kwanghoon Kim (Kyonggi Univ., ROK)
12-3	Structural Analysis of GSCM Systems in the Manufacturing Supply Chain
	DongHyuk Jo (Soongsil Univ., ROK)
12-4	The Affection of Hybrid MEC Resources Management based on SDN for Improving the QoS for Future Heterogenous IoT applications
	Sa Math, Prohim Tam (Soonchunhyang Univ., ROK), Jin Wang, Wenbing Wu, Yongsong Zou (Changsha Univ. of Science & Technology, China), Zilong Jin (Nanjing Univ. of Information Science and Technology, China), Seokhoon Kim (Soonchunhyang Univ., ROK)
12-5	Recent Progress on Parallel Processing Techniques for Computational Engineering
	Minseong Kim, Woochan Lee (Incheon National Univ., ROK), Moonseong Kim (Seoul Theological Univ., ROK), Jaeyoung Park (KIST, ROK)
12-6	Characteristics Analysis of Sodinokibi and GANDCRAB
	Young-Woong You, Ju-Seong Ko, Jin Kwak (Ajou Univ., ROK)
12-7	A Development of Digitalized Raw Materials Location by Connection of the Energy Monitoring System
	Hyunsuk Hwang, YoungWon Seo, Taeyeon Kim (New Communication Infotech Co., Ltd. ROK)

Conference Program

| 15:40-17:20, Mon, Dec.16, 2019 |

Session 12: Interactive Presentation Session II (Room 3)

(15:40-17:20, Mon, Dec. 16, 2019)

Chair: Dr. Jongwook Woo
(California State Univ., Los Angeles, USA)

12-8	Blockchain-based value record preservation platform
	Minsung Son, Namgi Kim, Heeyoul Kim (Kyonggi Univ., ROK)
12-9	Study on IoT Service Server for Smart Contents
	Jiyong Lim, Sanghyun Park, Hyosang Lee, Hochul Kim, Amsuk Oh (Tongmyong Univ., ROK)
12-10	Ethernet Ring Protection Method for Fronthaul Links in 5G Cloud Radio Access Networks
	Muhammad Waqar, Ajung Kim (Sejong Univ., ROK)
12-11	Analysis of interval-based and fuzzy-based granular models based on knowledge-based rules
	Chan-Uk Yeom, Keun-Chang Kwak (Chosun Univ., ROK)
12-12	Integrating Structure of Multiple Levels using Meta Learning in Task Configuration
	Joo-Chang Kim, Sung-Soo Park (Kyonggi Univ., ROK), Roy C. Park (Sangji Univ., ROK), Namgi Kim, Kyungyong Chung (Kyonggi Univ., ROK)
12-13	Deep Learning Model Validation Method based on the Shared Memory in Distributed High Performance Computing
	Eun-Ji Lim, Shin-Young Ahn, Wan Choi (ETRI, ROK)
12-14	Development of early-childhood education platform for immersive interaction-based block play employing smart devices
	EUN HO KIM (Korea Institute of Industrial Technology, ROK)

Conference Program

| 08:30-10:00, Tue, Dec.17, 2019 |

Session 13: Software Engineering & Architecture / Cloud Computing & Smart Computing Services and Applications

(Room 1)

Chair: Dr. Deepanjali Shrestha
(Nanjing Univ. of Aeronautics & Astronautics, China)

08:30-10:00, Tue, Dec. 17, 2019

13-1	Bug Bounty Regulatory and Institutional trends
	DaUn Jung, JungTaek Seo (Soonchunhyang Univ., ROK)
13-2	Fingerprint and Location based Authentication Scheme in Cloud Environment
	Jeong-Seok Jo, Jin Kwak (Ajou Univ., ROK)
13-3	A Study on the Possibility of Cyber Attack by the Intrusion of Drone into Infrastructure
	JangHoon Kim, JooChan Lee, MinGyu Lee, JungTaek Seo (Soonchunhyang Univ., ROK)
13-4	Utilizing Classification-based Fault Pattern for Enhancing the Effective Search of GP
	Kyeongsic Min, Ji-Su Choi, Byungjeong Lee (Univ. of Seoul, ROK)
13-5	Memory Modulation Attack through PLC Vulnerability
	JooChan Lee, HyunPyo Choi, JangHoon Kim, JunWon Kim, DaUn Jung, JiHo Shin, JungTaek Seo (Soonchunhyang Univ., ROK)
13-6	The Affection Management of Massive Traffic Based on MEC and Network Slicing Method for Improving 5G Core Network Performance
	Zilong Jin (Nanjing Univ. of Information Science and Technology, China), Jin Wang, Wenbing Wu, Yongsong Zou (Changsha Univ. of Science & Technology, China)

Conference Program

| 08:30-10:00, Tue, Dec.17, 2019 |

Session 14: Software Engineering & Architecture / Cloud Computing & Smart Computing Services and Applications

(Room 2)

08:30-10:00, Tue, Dec. 17, 2019

Chair: Dr. Moonseong Kim

(Seoul Theological Univ., ROK)

14-1

A Research on Data Block Value-Modulated Attack Techniques through Siemens S7 PLC Vulnerability

Jun-Won Kim, Hyun-Pyo Choi, Joo-Chan Lee, Jang-Hoon Kim, Da-Un Jung, Jung-Taek Seo (Soonchunhyang Univ., ROK)

14-2

Small sample time series prediction based on multi-model fusion method

Xi Chen, Yuming He, Dun Cao, Jie Li, Shuo Peng (Changsha Univ. of Science & Technology, China)

14-3

A Compositional Approach to Generate Benign Samples from Android Packages

Ngoc-Tu Chau, Souhwan Jung (Soongsil Univ., ROK)

14-4

The Segmentation of Psoriasis Area with Level Set

HyunJong Yoo, JiWon Lee, Moon Choi, EunBin Kim (Soonchunhyang Univ., ROK), YooSang Baek (Korea Univ., ROK), OnSeok Lee (Soonchunhyang Univ., ROK)

14-5

Guidelines of Technical Project Management for Project Managers in Information Systems Projects

Hwa Soo Kim (Ajou Univ., ROK), Young Sun Park, Gyun Shin, Chang Su Choi, Changrok Jang, , Gyeong Che Cho (DUDU IT Co., Ltd. ROK), Pham Thi Thu Thuy (Nha Trang Univ., Vietnam)

Conference Program

| 10:10-11:40, Tue, Dec.17, 2019 |

Session 15: KETI WS session (Room 1)

Chair: Dr. Ki Won Kwon

10:10-11:40, Tue, Dec. 17, 2019

(KETI, ROK)

15-1	A Study on the Development of Data Analysis Software and Time Series Big Data Analytics of Connected Vehicles
	Jaekyu Lee, Sangyub Lee, Hyosub Choi, Chulseoung Chae, Jinwon Park (KETI, ROK), Hyeonjoong Cho (Korea Univ., ROK)
15-2	Hand Gesture Recognition in images using SSD on Windows and Android
	Ju Yeong Sung, Yongsuk Park, Seho Park (KETI, ROK)
15-3	Research of High Precision 3D Data Cloud Platform for Virtual Training
	Minho Son, Jeongseop Bae, Ilryong Kweon (PODO inc., ROK), Hunghwan Choi (egisKOREA, ROK)
15-4	Design of EV Charge Schedule for General EV Slow Charge and EV Bus Fast Charge to Distribute Charge Power
	Tae Uk Chang (Seoul Women's Univ., ROK), Young Su Ryu, Ki Won Kwon (KETI, ROK), Jong Ho Paik (Seoul Women's Univ., ROK)
15-5	Chatbot Service through Semantic Information analysis based on Conversational User Interface(CUI)
	Jaewon Lee, Dalwon Jang, Miji Kim, SeoYul Kim, Jisu Kim, Jai-Won Chung, JongSeol Lee (KETI, ROK)
15-6	Guidelines of Data Modeling on Open Data Platform for Smart City
	Seongyun Kim, SeungMyeong Jeong (KETI, ROK)
15-7	Implementation of Hybrid Wireless Earphone System with Multiple Auditory Compensation
	Hyun-Kab Kim, Jongseol Lee, Jaewon Lee, Dalwon Jang (KETI, ROK)

Conference Program

| 10:10-11:40, Tue, Dec.17, 2019 |

Session 16: Interactive Presentation Session II

(Room 2)

10:10-11:40, Tue, Dec. 17, 2019

Chair: Dr. Sangmin Lee

(CHA Univ., ROK)

16-1	A Study on Improving Speaker Recognition Performance Based on Vehicle Navigation
	InPyo Cho, JaeKyu Lee, GyuTae Oh, SangYub Lee (KETI, ROK)
16-2	Embedded Artificial Intelligence System for the detection of driving status
	Sangyub Lee, Inpyo Cho, Jaekyu Lee (KETI, ROK)
16-3	Simulation of Ultrasonic Signal Processing
	Youn-Sung Lee, Jungwook Wee, Yong-Seong Kim (KETI, ROK)
16-4	Study on PTZ Camera Control Method Based on Reinforcement Learning
	Sungjoo Park, Dongchil Kim (KETI, ROK)
16-5	Operating Criteria Association Rules Based Real-Time Operational Status Recommender System
	Changwoo Kim, Hyosub Choi (KETI, ROK)
16-6	Alert Transmission and Management Protocol for Public Facilities
	Jinhee Park (KETI, ROK)

Conference Program

| 10:10-11:40, Tue, Dec.17, 2019 |

Session 16: Interactive Presentation Session II

(Room 2)

10:10-11:40, Tue, Dec. 17, 2019

Chair: Dr. Sangmin Lee

(CHA Univ., ROK)

16-7	Development of service scenarios and requirements for home IoT edge hub
	Dalwon Jang, Jaewon Lee, Miji Kim, Jisu Kim, Seoyul Kim, JongSeol Lee (KETI, ROK)
16-8	VGI based Smart walking Map service for Mobility handicap Users
	Minho Son, Il Ryong Kweon (PODO inc., ROK), HyuenHee Lee (Gachon Univ., ROK), Ayoung Kim (PODO inc., ROK)
16-9	VR/AR Technology Trend Research based on Jamming Analysis
	Youngmin Kim, Jisoo Hong, Sunghee Hong (KETI, ROK), Youngchan Jang, Chong Sok Lim (IITP, ROK), Elena Stoykova (Bulgarian Academy of Sciences, Bulgaria)
16-10	High Precision BIM(Building Information System) 3D Model Data Service Performance Improvement Method
	MoonHee Lee, JinWook Jang, KiYoung Kim (Infra Information Technology, ROK), ChanSoo Park (New Layer, ROK)
16-11	A Study on the Trend of Technology Convergence from the Output Perspective
	Jeonghwan Lee (Myongji Univ., ROK), Injong im (KETI, ROK)
16-12	Study of Scheduling and Scaling Techniques for Effective Resource Management
	Ria Choi, Jaehoon An, Younghwan Kim (KETI, ROK)

Conference Program

| 13:00-14:30, Tue, Dec.17, 2019 |

Session 17: IoT (Internet of Things) / Machine to Machine & Management of Internet Application/E-Business/E-Commerce & Future Information Security (Room 1)

Chair: Dr. Bobby Gerardo

13:00-14:30, Tue, Dec. 17, 2019

(West Visayas State University, Philippines)

17-1

Future Intelligent Cyber Security Training System Based on Virtualization and Cloud Using AI Technology

Young Sun Park (DUDU IT Co., Ltd. ROK), Hwa Soo Kim (Ajou Univ., ROK)

17-2

Designing An Indoor Air Quality Monitoring System using IoT Sensor - A Real-time Indoor Air Quality Monitoring System using IoT Sensor

Sudan Prasad Uprety, Hyunuk Kim (Kookmin Univ., ROK), Yoosin Kim (Univ. of Seoul, ROK), Seung Ryul Jeong (Kookmin Univ., ROK)

17-3

Implementation of random dot kinematogram diagnosis system for cognitive disorder

Jun Ma, Eek-Sung Lee, Junseob Kim, Min Hong (Soonchunhyang Univ., ROK)

17-4

A Study on the Prevention of Forest Fire Spread based on the Hierarchical Structure of Drone Flight

Sieun Choi, Jiyeong Kim, Hyungju Jang, Jong Ho Bang (Seoul Women's Univ., ROK)

17-5

Customers Attitude towards Internet Banking Services: A Case Study of Pokhara, Nepal

Deepanjali Shrestha (Nanjing Univ. of Aeronautics and Astronautics, China), Ram Chandra Kandel, (Pokhara Univ., Nepal), Tan Wenan (Nanjing Univ. of Aeronautics and Astronautics, China), Seung Ryul Jeong (Kookmin Univ., ROK)

Conference Program

| 13:00-14:30, Tue, Dec.17, 2019 |

Session 18: KETI WS Interactive Presentation Session II & Interactive Presentation Session III (Room 2)

13:00-14:30, Tue, Dec. 17, 2019

Chair: Dr. Jaehyoun Kim
(Sungkyunkwan Univ., ROK)

18-1	Design of EV Charge Schedule Server API for Distributed Charging General EV and EV Bus
	Youngsu Ryu, Donghyun Kim, Kyungwon Park, Kiwon Kwon (KETI, ROK)
18-2	React Native Application SW Architecture Cooperating with External Device for Detecting Face and Voice Recognition
	InPyo Cho, JaeKyu Lee, GyuTae Oh, SangYub Lee (KETI, ROK)
18-3	Facial Skin Condition Analysis System
	Yong-Suk Park, Hyun-Sik Kim, Song Yeon Lee (KETI, ROK)
18-4	A Deep Learning Approach to Scalp and Hair Diagnosis
	Hyun-Sik Kim, Yong-Suk Park, DongWan Maeng (KETI, ROK)
18-5	A Study on the Disaster Information and Evacuation Support System for the Elderly and Disabilities
	Minho Son, Ilryong Kweon (PODO inc., ROK), Taeho Jung (NDMI, ROK), Woojin Lee (NewLayer Co. Ltd., ROK)
18-6	Study on Implying Machine Learning to Reinforce the Contents of Class
	Oakyoun Han, Jaehyoun Kim (Sungkyunkwan Univ., ROK)

Conference Program

| 13:00-14:30, Tue, Dec.17, 2019 |

Session 18: KETI WS Interactive Presentation Session II & Interactive Presentation Session III (Room 2)

13:00-14:30, Tue, Dec. 17, 2019

Chair: Dr. Jaehyou Kim
(Sungkyunkwan Univ., ROK)

18-7	An Approach to Detect Missing IRIS Plate in Smart Phone Lens Assembly
	Dinh Viet Sang (Hanoi Univ. of Science and Technology, Vietnam), Jaesun Lee, OS Lee (Haesung Optics Co. Ltd, ROK), Mingoo Kang (Hanshin Univ., ROK)
18-8	Block-chain Platform for Fine-dust Sensing in Smart City Environment
	Frank Elijorde, Bobby Gerarado (West Visayas State Univ., Philipines), J.W., Lee (Kunsan National Univ., ROK), M.G., Kang (Hanshin Univ., ROK)
18-9	An emotion speech recognition system using AI
	Seok-Pil Lee, Sung-Woo Byun, Huisu Son, Juhee Kim (Sangmyung Univ., ROK)
18-10	Design of Block-chain Platform based on Multi-modal Biometric Authentication for PS-LTE Terminals and Smart KIOSK Services
	Mingoo Kang (Hanshin Univ., ROK), Jongwook Woo (California State Univ., Los Angeles, USA), Yongjun Yoo (3Amtelecom Co. LTD, ROK)

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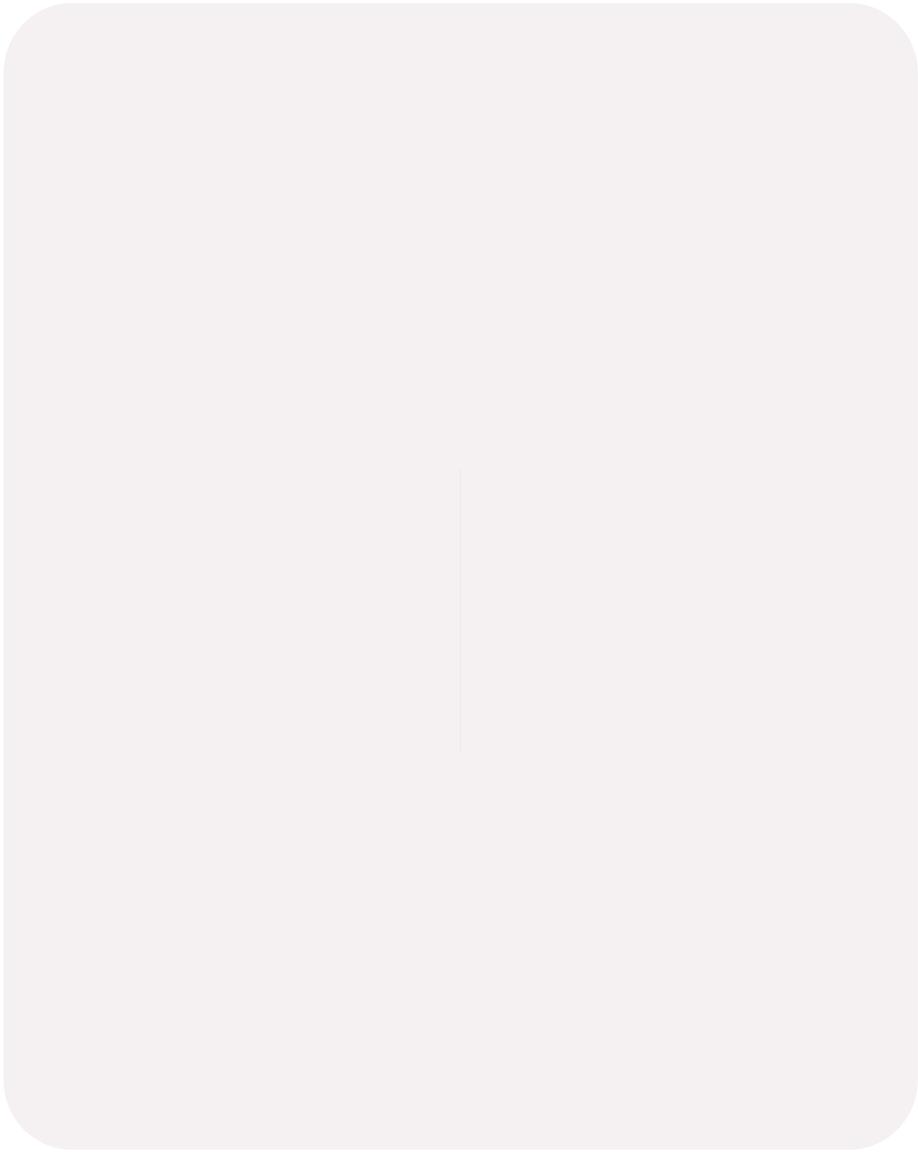
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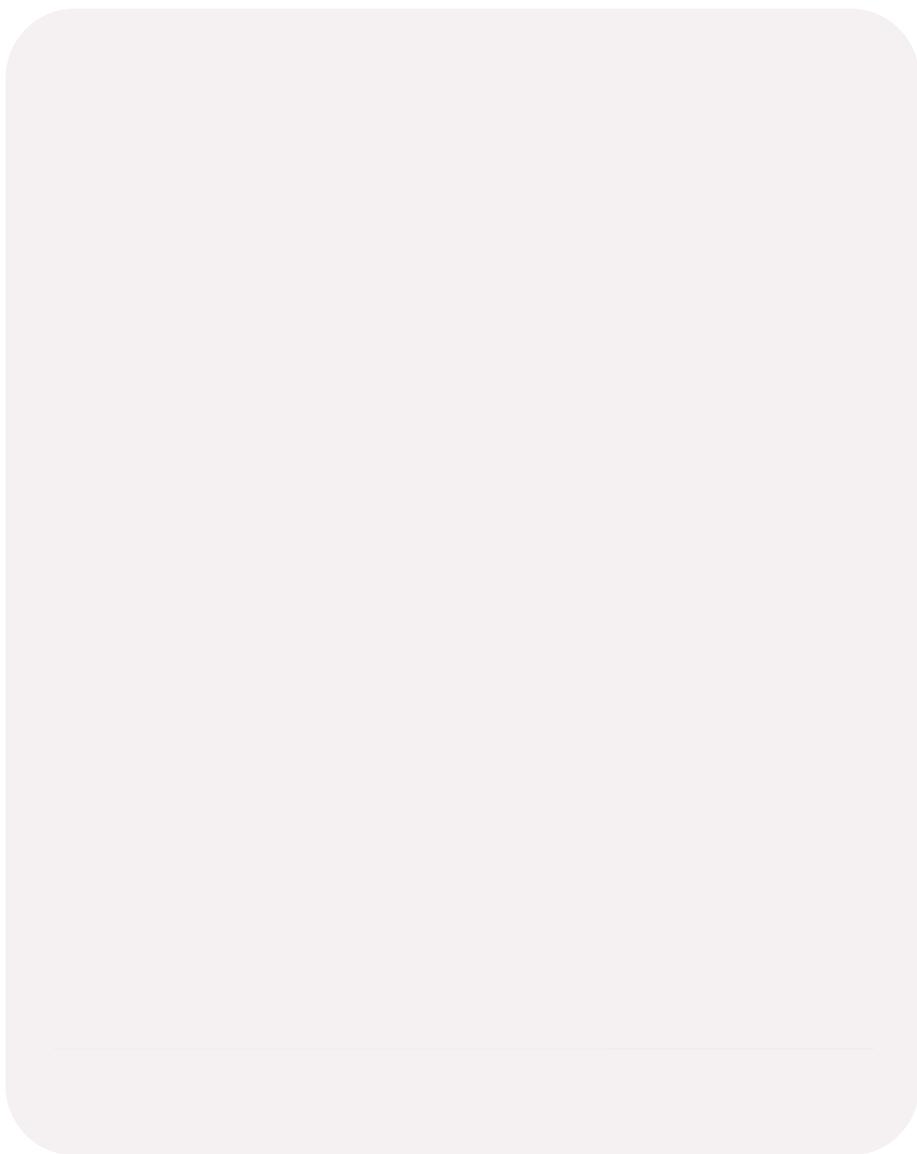
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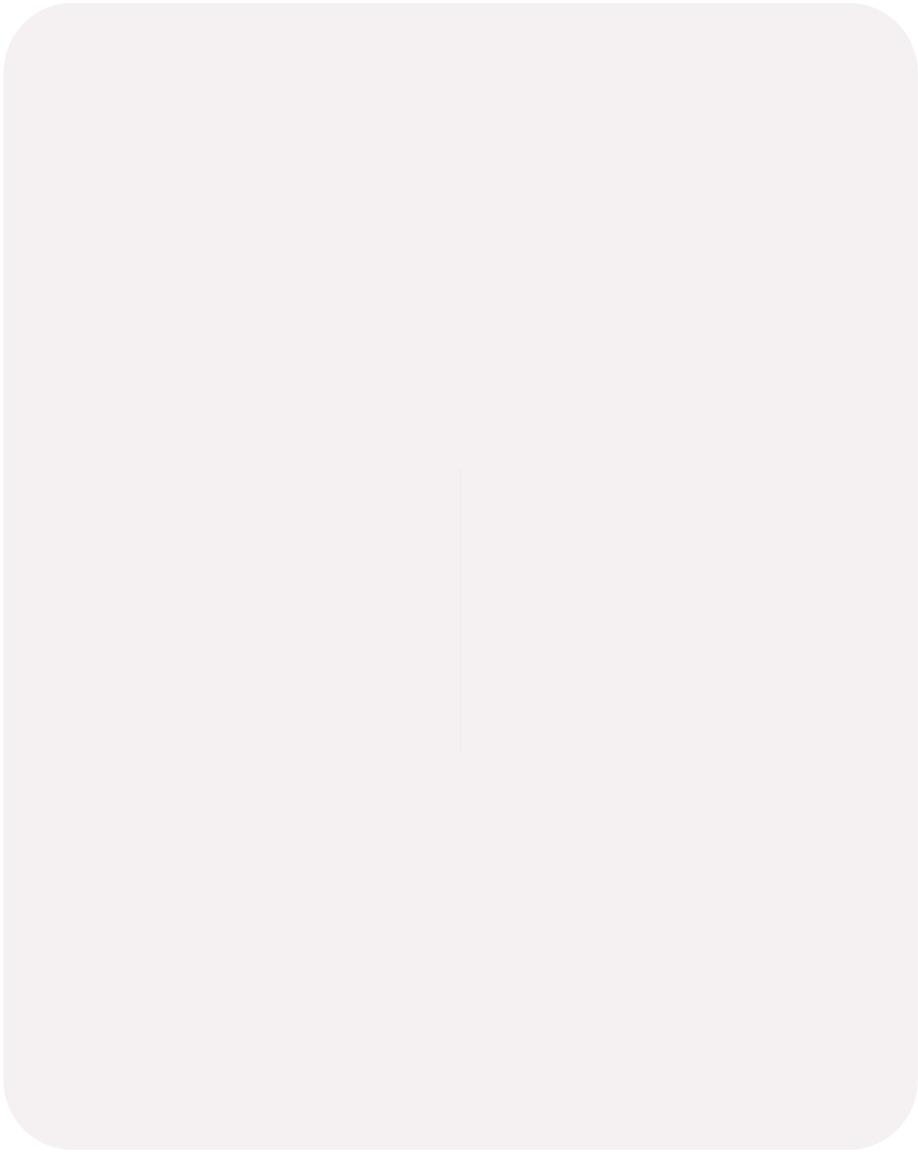
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