KOREAN SOCIETY FOR INTERNET INFORMATION

The 15th Asia Pacific International Conference on Information Science and Technology

(APIC-IST 2020)

July 5-7, 2020, Sheraton Seoul Palace Gangnam Hotel, Korea

http://www.apicist.org/2020

Conference Program

| Organized by |

Korean Society for Internet Information (KSII)

The University of Queensland (Australia)

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A Message from Honorary Chair

I express my warm heartfelt welcome to all of attendants of the 15th Asia Pacific International Conference on Information Science and Technology (APIC-IST 2020) that will be held from July 5~7, 2020 in Sheraton Seoul Palace Gangnam Hotel, Republic of Korea .

I deeply appreciate all contributors for submitting papers, chairing sessions, and reviewing papers. And I must thank for the support we received from many companies.

Over the past 20 years, KSII (Korea Society for Internet Information) has increased its academic impact and influence in the area of Information Science, Computer Engineering and Internet Technology both worldwide and nationwide through this international conference and its SCIE-indexed journal, the *KSII Transactions on Internet and Information Systems* (TIIS).

As many of you have witnessed, APIC-IST is one of important International Conferences which KSII have provide annually. The amount of interest towards the internet is never decreasing among both the international academic and practitioners' communities. Topics covered in APIC 2020 truly represent the comprehensiveness of this conference. We are sure that APIC-IST 2020 will provide you with a wealth of information and many opportunities for future discussion.

Many people have worked hard to make APIC 2020 successful. A variety of conference arrangements and special events as well as well organized program have been prepared by the Conference Chairs Prof. Jin Kwak (Ajou Univ., ROK) and Prof. Dongseong Kim (Univ. of Queensland, Australia), Program Chairs Prof. Min Hong (Soonchunhyang Univ., ROK), Prof. Julian Jang-Jaccard (Massey Univ., New Zealand). I also express my special thanks to the Keynote Speakers, Dr. Sung Y. Shin who is the South Dakota State University, U.S.A and Dr. Jang-Hyun Kim, Sungkyunkwan University, Korea.

In addition, my special thanks go to Advisory Board members, Program Committee members, Steering Committee members.

Last but not least, I would like to thank all authors and speakers again for their valuable research papers and efforts to make the 15th APIC-IST 2020 a success! I wish a great success in their future endeavor and look forward to meeting you all again at ICONI 2020 that will be held on December Jeju Island, Korea.

Dr. Jaehyoun Kim

Honorary Chair of APIC-IST 2020

A Message from Conference Chairs

Welcome to the 15th Asia Pacific International Conference on Information Science and Technology (APIC-IST 2020). which will be held on July 5-7, 2020, at Sheraton Seoul Palace Gangnam Hotel, Republic of Korea. APIC-IST is an annual conference organized by KSII providing an open forum for researchers, engineers, policy makers, and service providers in the Information Science and Technology.

In this year, we are glad to invite the prospective authors to submit oral & poster papers in the following areas: Smart Phone Applications and Service, Mobile Internet Computing / Wireless and Sensor Network, Security & Privacy in Internet / IoT (Internet of Things) & Machine to Machine / Multimedia, Image Processing & HCI, Intelligent Systems / Database, Data Mining, Big Data & Mobile Object Database / Software Engineering & Architecture, Cloud Computing / Smart Learning, e-Learning, Learning Contents & Management Systems / Management of Internet Application & E-Business, E-Commerce / Contents based Software R&D Monitoring, Testing, and Reuse / AI & Resilience in Smart City / Smart Rehabilitation & Wellness Technology / Future Information Security.

As time goes on, annual APIC-IST conference becomes more qualified conference in which many honorable researchers participate to share their valuable research results. APIC-IST 2020 offers 2 invited talks, 10 sessions and a special workshop that present the latest results in various research fields of ICT (Information Communication Technology). I would like to thank to Dr. Sung Y. Shin and Prof. Jang-Hyun Kim for their keynote speeches participation.

I must thank to all the authors and speakers for the research papers on their precious achievements. Seoul, the most popular tourist destinations of Republic of Korea is known as a beautiful and historical place in the world. I hope all participants of APIC-IST take this opportunity to explore and encounter beautiful nature and UNESO- designated World Heritage simultaneously while staying in Republic of Korea .

Dr. Jin Kwak Dr. Dongseong Kim
Conference Chairs of APIC-IST 2020

Dr. Jin Kwak
Ajou University, ROK

Dr. Dongseong Kim
Univ. of Queensland, Australia

A Message from Program Chairs

It is a pleasure to welcome you to the 15th Asia Pacific International Conference on Information Science and Technology (APIC-IST 2020). The APIC-IST 2020 will be held at Seoul, Korea on July 5-7. The APIC-IST, hosted by Korean Society for Internet Information (KSII) is the premier conference in the Asia Pacific region. The hosting organization (KSII) is the largest Internet academic society in Korea.
Over the past 15 years, APIC-IST has grown to be the major international conference in Information Science and Technology area. APIC-IST continues the endeavor of high-quality, broad international participation in all areas of Information Science and Technology.

Dr. Min Hong
Soonchunhyang University, ROK

Although it is a difficult time to visit abroad due to the coronavirus pandemic, we decided to hold APIC-IST 2020 for continuing academic exchange between ICT related scholars using ICT technology such as online presentation. It aims to provide a high quality forum for researchers and practitioners to share research findings, practices and ideas on key issues in Internet related technologies, services, and administrations. The APIC-IST 2020 Program Committee organizes as a set of 17 tracks, and welcomes presentations of completed research papers as well as research-in-progress papers, panel discussion, and posters covering those issues.

Dr. Julian Jang-Jaccard
Massey Univ., New Zealand

The successful organization of APIC-IST has required the talents, dedication and time of many volunteers from China, USA, Pakistan, Malaysia, Laos, Saudi Arabia, Norway, Philippines and Republic of Korea. Special gratitude and appreciation go to Dr. Jaehyoun Kim, Dr. Jin Kwak and various session chairs. We would also like to thank the various session chairs as they are primarily responsible for the content of the technical program.

All submitted papers went through a fair paper review process and excellent 70 papers will be presented at APIC-IST 2020. We would like to thank to all the authors and speakers for submitting and presenting their valuable research papers at APIC-IST 2020.

Dr. Min Hong Dr. Julian Jang-Jaccard
Conference Chairs of APIC-IST 2020

Keynote Speakers

Keynote Speaker Dr. Sung Y. Shin

Computer Science at South Dakota State University in Brookings, USA

Title: Current Research Trends and Future Perspectives on the Big Data and AI including Deep Machine Learning Techniques

Abstract of the talk:

Over the past decade, Big Data and Artificial Intelligence (AI) related techniques including deep machine learning techniques have been increasingly adapted for the processing, analysis, and decision making of various data sets for applications in many areas. These techniques are one of today's most rapidly growing technical fields, lying at the intersection of computer science and statistics, and at the core of artificial intelligence and data science. Recent progress in Big Data and AI including deep machine learning has been driven both by the development of theory, algorithms and big data architectural design and by the availability of massively archived data sets. The adoption of Big Data, AI, and deep machine-learning techniques can be found in the area of science, engineering, agriculture, health science, education, and the tech industry. A number of research projects in various fields and areas are introduced in the presentation. Additionally, the presentation will share the current research status and future perspectives based on research trends and analysis.

Keynote Speaker Prof. Jang-Hyun Kim

An associate professor at Department of Interaction Science, Sungkyunkwan University, Republic of Korea

Title: From What People Say to What City Governments Do: A Data Science Approach to Voice of Citizens in Seoul

Abstract:

Data Science and Social Analytics Lab (DSSAL) of Sungkyunkwan University, directed by the speaker, has cooperated with Seoul Digital Foundation, to enhance city government's responsiveness to citizen voices. DSSAL has introduced a novel approach to analyze diverse informal civic query data for a city and has proposed a prototype by which the government can minimize the time spent from its reception of civil complaints to responding to them. First of all, it analyzed 160,000 civic queries from 2006 to 2017 from the "Oasis of 10 Million Imagination," a civic participation platform of Seoul. Second, it standardized the process of classifying civil complaints and opinions, and enhanced efficiency to respond to them by assigning each complaint to relevant division of city offices as soon as possible. Third, it analyzed the frequent complaints submitted by relatively small number of people and retrieved types of severe complaints to shorten the response time and heighten the quality of responses. With Dynamic Topic Model, Structural LDA, and sentiment analysis, DSSAL is striving to contribute to forming a better type of democracy and civil life.

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Isma Farah Siddiqui, Mehran Univ. of Engineering & Technology, Pakistan

Conference Program

Sun / July 5, 2020	Room 1
16:00-18:00	VIP Reception & Greeting

Mon / July 6, 2020	Room 1 (Dynasty Hall B)	Room 2 (Jade B)
08:30-	Registration	
09:00-10:30	Session 1	Session 2
10:40-11:55	Session 3	Session 4
12:00-13:00	Lunch (11: 30 ~ 13:30)	
13:00-14:30	Session 5	Session 6
14:40-16:10	Session 7	Session 8
16:20-17:20	Session 9	Session 10
17:30-19:30	Opening Ceremony & Keynote speeches Award Ceremony / Banquet	

Tue / July 7, 2020	Room 1 (Dynasty Hall B)
09:30-11:00	Workshop of Fourth Industrial Revolution Technology: Network & Security
13:00-15:00	Panel Discussion: Collaborative Research

Conference Program

Sun, July 5, 2020

16:00-18:00	VIP Reception & Greetings

Mon, July 6, 2020

09:00-10:30	Session 1: Smart Phone Applications and Service / Mobile Internet Computing & Management of Internet Application / E-Business / E-Commerce
	Session 2: Multimedia / Image Processing / HCI / Intelligent Systems & Software Engineering / Architecture / Cloud Computing & AI and Resilience in Smart City & AI and Resilience in Smart City
10:40-11:55	Session 3: Software Engineering / Architecture / Cloud Computing & Future Information Security
	Session 4: Database / Data Mining / Big Data / Mobile Object Database
12:00-13:00	Lunch
13:00-14:30	Session 5: Multimedia / Image Processing / HCI / Intelligent Systems & Contents based Software R&D Monitoring, Testing, and Reuse
	Session 6: Wireless and Sensor Network / Security / Privacy in Internet & Multimedia / Image Processing / HCI / Intelligent Systems & Database / Data Mining / Big Data / Mobile Object Database

Conference Program

Mon, July 6, 2020

14:40-16:10	Session 7: Wireless and Sensor Network / Security / Privacy in Internet & Multimedia / Image Processing / HCI / Intelligent Systems & Database / Data Mining / Big Data / Mobile Object Database
	Session 8: IoT (Internet of Things) / Machine to Machine
16:20-17:20	Session 9: Interactive Presentation Session Ⅰ
	Session 10: Interactive Presentation Session Ⅱ
17:30-19:30	Opening Ceremony & Keynote speeches *Dr. Dr. Sung Y. Shin, South Dakota State Univ., USA* *Prof. Jang-Hyun Kim, Sungkyunkwan Univ., Republic of Korea* Award Ceremony / Banquet

Tue, July 7, 2020

09:30-11:00	Workshop of Fourth Industrial Revolution Technology: Network & Security
13:00-15:00	Panel Discussion: Collaborative Research

*** Presentation Time**

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

Conference Program

| 09:00-10:30, Mon, July 6, 2020 |

Session 1: Smart Phone Applications and Service / Mobile Internet Computing & Management of Internet Application / E-Business / E-Commerce **09:00-10:30, Mon, July 6, 2020**	**Chair: Dr. Junho Ahn (Korea National Univ. of Transportation, ROK)**
1-1	Step Detection When Users Vertically Hold Smartphones
	KyuHwon Park, Young-Seob Jeong (Soonchunhyang Univ., ROK)
1-2	Conventional VS Blockchain-Based E-Vote System
	Pooja Kumari, Bhagia Sheri, Isma Farah Siddiqui, Khubaib Khatri (Mehran Univ. of Engineering & Technology, Pakistan)
1-3	Camera-based Korean Sign Language Recognition for Banking Transaction
	Soonja Yeom (Univ. of Tasmania, Australia), Inseop Na (Chosun Univ., ROK)
1-4	Evaluation and Analysis of Tourism Website of Nepal from User Perspective
	Deepanjal Shrestha, Tan Wenan (Nanjing Univ. of Aeronautics and Astronautics, China), Neesha Rajkarnikar (Nanjing Tech Univ., Pukao, China), Seung Ryul Jeong (Kookmin Univ., ROK)
1-5	Automated Static Classification System for Malicious Code Using Machine Learning and Deep Learning
	Sungjoong Kim, Seongkyu Yeom, Jiwon Kang, Dongil Shin, Dongkyoo Shin (Sejong Univ., ROK)
1-6	A Patrol Route Guidance Recommendation Service Platform based on User' Desire Information
	Hajeong Yoo, Yumin Jo, Yejin Jang, Jongho Paik (Seoul Women's Univ., ROK)

Session 2: Multimedia / Image Processing / HCI / Intelligent Systems & Software Engineering / Architecture / Cloud Computing & AI and Resilience in Smart City & AI and Resilience in Smart City

09:00-10:30, Mon, July 6, 2020

Chair: Dr. Jin Kwak (Ajou Univ., ROK)

2-1	DICOM images format can be used without time consuming preprocessing in brain PET images classification.
	Seung-Yeon Lee, Hyeon Kang, Kook Cho, Young-Jin Jeong (Dong-A Univ., ROK), Jangsik Park (Kyungsung Univ., ROK), Do-Young Kang (Dong-a Univ., ROK)
2-2	An Intuitive Implementation Of Alpha-Beta Pruning Using Tic-Tac-Toe
	Asad Jatoi, Sarvech Ali, Isma Farah Siddiqui (Mehran Univ. of Engineering & Technology, Pakistan)
2-3	A study on the genetic algorithm for solving the job shop scheduling problem
	Fuladi Shubhendu, Chang Soo Kim (Pukyong National Univ., ROK)
2-4	Implementation of Subjective Visual Vertical Testing System with Virtual Reality
	Hongly Va, Sungjin Lee (Soonchunhyang Univ., ROK), Soo Kyun Kim (Jeju National Univ., ROK), Min Hong (Soonchunhyang Univ., ROK)
2-5	VR based random dot kinematogram for Mild cognitive impairment
	Jun Ma, Eek-Sung Lee, Min Hong (Soonchunhyang Univ., ROK)
2-6	TestHub – Towards An Ecosystem for software and hardware testing using AI and ML
	Tahir Hussain, Mir Hassan Qazi, Zahoor Ahmad, Isma Farah Siddiqui (Mehran Univ. of Engineering & Technology, Pakistan)

Session 3: Software Engineering / Architecture / Cloud Computing & Future Information Security	
10:40-11:55, Mon, July 6, 2020	Chair: Dr. Jongho Paik (Seoul Women's Univ., ROK)
3-1	A Detection of Webtoon Infringement Site Using Page Source Analysis
	Eui-Jin Kim, Seul-Ki Choi, Jin Kwak (Ajou Univ., ROK)
3-2	Drive-by Download Detection Method with Traffic Analysis
	Hee-Seung Lee, Jin Kwak (Ajou Univ., ROK)
3-3	Video Steganography-based Botnet Communication in Telegram Messenger
	Minkyung Kwak, Youngho Cho (Korea National Defense Univ., ROK)
3-4	Research on Cyber Intelligence Preparation of the Battlefield Visualization Plan using BGP Archive Data
	Jaepil Youn (Sejong Univ., ROK), Oh Haengrok (Agency for Defense Development, ROK), Jiwon Kang, Dongkyoo Shin (Sejong Univ., ROK)
3-5	Ryu and OpenDaylight Controllers Performance based on Link Aggregation and Software Define Network
	Thongdy Keophilavong, Sackda Sackbouavong, Souksavanh Choundaly (National Univ. of Laos, Laos)

Session 4: Database / Data Mining / Big Data / Mobile Object Database	
10:40-11:55, Mon, July 6, 2020	Chair: Dr. Inseop Na (Chosun Univ., ROK)
4-1	Data Virtualization System for Heterogeneous DBMS using Single Channel Access
	Philip Wootaek Shin, Kyujong Han, Gibeom Kil (Data Streams Corporation, ROK)
4-2	Concrete Crack Detection Using A Modified U-Net Architecture
	Michael Sun, Kwanghee Won (South Dakota State University, USA)
4-3	The Evaluation of Tourist Satisfaction Based on the Text Analysis Method—Taking the Five Great Mountains in China as an Example
	Hanwen GUO, Zeyu JIAO, Ziyang LIU (Kyonggi Univ., ROK)
4-4	Towards a reliable document verification system based on BlockChain using Etheruem
	Faisal Khuwaja, Osama Pathan, Sarmad, Isma Farah Siddiqui (Mehran Univ. of Engineering & Technology, Pakistan)
4-5	A Novel Deep Reinforcement Learning Approach for Complex Multi-job Multi-machine Scheduling Problem
	Xiaorui Shao, Chang Soo Kim (Pukyong National Univ., ROK)

Session 5: Multimedia / Image Processing / HCI / Intelligent Systems & Contents based Software R&D Monitoring, Testing, and Reuse

13:00-14:30, Mon, July 6, 2020

Chair: Dr. Moonseong Kim (Seoul Theological Univ., ROK)

5-1	Intelligent Abnormal-Event Detection System using Vision, Audio, Dust Sensors
	Ju Ho Jung, RyumDuck Oh, Jeong Won Kang, Junho Ahn (Korea National Univ. of Transportation, ROK)
5-2	Forecasts of Increasing the Number of Branches of Chrysanthemum using Poisson regression model and zero excess Poisson regression model
	Sumin Jeong, Wanhyun Cho, Myung-Hwan Na (Chonnam National Univ., ROK), MyoungHee Jeon (Gyonggi-Do Agricultural Research & Extension Serves, ROK)
5-3	A KERAS BASED IMPLEMENTATION FOR EFFICIENT HANDWRITTEN DIGIT RECOGNITION USING CONVOLUTIONAL NEURAL NETWORKS
	Muzamil Nawaz ,Sandesh Gangwani, Isma Farah Siddiqui (Mehran Univ. of Engineering & Technology, Pakistan)
5-4	Synthesizing Augmented Acrobatic Scenes using Hit Motion Videos
	Jongin Choi (Seoul Women's Univ., ROK), SangHun Nam (Changwon National Univ., ROK)
5-5	Cycle and Progressive GAN for Facial Expressions Synthesis and Translation Tasks
	Xibin Jia, Guangyao Bi (Beijing Univ. of Technology, China)
5-6	Design an efficient Content Mangement Platform for multi-content distribution
	Byung-Duck Lee (Korea Univ., ROK), Keun-Ho Lee (Baekseok Univ., ROK), Seong-Soo Han (Kangwon National Univ., ROK), Chang-Sung Jeong (Korea Univ., ROK)

Session 6: Wireless and Sensor Network / Security / Privacy in Internet & Multimedia / Image Processing / HCI / Intelligent Systems & Database / Data Mining / Big Data / Mobile Object Database	
13:00-14:30, Mon, July 6, 2020	Chair: Dr. Changsoo Kim (Pukyong National Univ., ROK)
6-1	Toward Higher Accuracy in Vocal Detection Using Convolutional Neural Networks
	Shingchern D. You, Chien-hung Liu, Woei-kae Chen, Jia-wei Lin (National Taipei Univ. of Technology, Taiwan)
6-2	DCNN Optimization Using Multi-Resolution Image Fusion
	Abdullah Alshehri (King Abdulaziz Univ.,Saudi Arabia), Adam Lutz, Soundararajan Ezekiel (Indiana Univ. of Pennsylvania, USA), Larry Pearlstein (The College of New Jersy, USA), John Conlen (Indiana Univ. of Pennsylvania, USA)
6-3	Supervised Learning for Detecting Abnormal Objects in Packaged Food X-ray Images
	Kangjik Kim, Hyunbin Kim, Junchul Chun (Kyonggi Univ., ROK), Mingoo Kang (Hanshin Univ., ROK), Hong Min (Soonchunhyang Univ., ROK), Byeongseok Min (Xavis CO., LTD, ROK)
6-4	Individual Pig Pose Estimation using Convolutional Neural Network
	Sang Kwan Lee, Kwanghee Won (South Dakota State University, USA), Jinwoo Park (Lasibon Co., Ltd, ROK), Sung Shin (South Dakota State University, USA)
6-5	Health prediction model using datamining
	Manyoung Park (Korea Institute of Oriental Medicine, ROK)
6-6	A Study on Detecting Suspicious and Malicious Activity based on AutoEncoder
	Chanwoong Hwang, Sunjin Kim, Doyeon Kim, Taejin Lee (Hoseo Univ., ROK)

Session 7: Wireless and Sensor Network / Security / Privacy in Internet & Multimedia / Image Processing / HCI / Intelligent Systems & Database / Data Mining / Big Data / Mobile Object Database

14:40-16:10, Mon, July 6, 2020

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

7-1	REDPACK: Relativistic Discriminator for Password Candidates Effective Pack
	Sungyup Nam, Seungho Jeon, Jongsub Moon (Korea Univ., ROK)
7-2	WSN configuration method to increase energy efficiency of nodes by utilizing clustering and location information
	Jinsoo Kim (NetCom Information & Communication Inc., ROK), Jaekeun Kim (Sejong Univ., ROK), Hyukjin Kwon (Ministry of National Defense, ROK), Jaejoon Hwang (Hanwha Systems, ROK), Sunghoon Hong (NetCom Information & Communication Inc., ROK), Dongil Shin, Dongkyoo Shin (Sejong Univ., ROK)
7-3	A Study on the DGA Domain Detection with text CNN
	Hongbi Kim, Hyosik Kim, Sejin Kim, Taejin Lee (Hoseo Univ., ROK)
7-4	Human Activity Recognition Based on Wearable Flex Sensor and Pulse sensor
	Xiaozhu Jin, Sangwon Shin, Soohyeon Choi, Sung Shin (South Dakota State University, USA)
7-5	Fingerprint-based Interference-aware Beam Selection in Beamspace Millimeter-wave Communications
	Huaping Liu (Oregon State Univ., USA), Hyeonsung Kim, Intae Hwang, Sangmi Moon (Chonnam National Univ., ROK)
7-6	A Method for Cyber Security Improvement using IP range Blocking Prioritization
	Choong-hee Han (Korea Power Exchange, ROK), Changhee Han (Korea Military Academy, ROK)

Session 8: IoT (Internet of Things) / Machine to Machine	
14:40-16:10, Mon, July 6, 2020	Chair: Dr. Mingoo Kang (Hanshin Univ., ROK)
8-1	Hierarchical Voting-based Byzantine Fault Tolerance Consensus Algorithm
	Minkyung Kim, Jai-Hoon Kim (Ajou Univ., ROK)
8-2	Comparative Evaluation of State-Of-The-Art Approaches in Regression Testing
	Israr Ghani, Wan M.N. Wan-Kadir, Adila Firdaus Binti Arbain, Ahmad Mustafa (Universiti Teknologi Malaysia, Malaysia)
8-3	Analysis of Sensing Data of Smart Home to Recognize User Behavior Using Word Embedding and Recurrent Neural Network for Life Observation of Dementia Patients
	Kookjin Kim, Hyunjung Ji, Sungjoong Kim, Dongil Shin, Dongkyoo Shin (Sejong Univ., ROK)
8-4	An Optimization Scheme for Resource Allocation in Vehicle Edge Networks
	YuXin Xu, Zilong Jin (Nanjing Univ. of Information Science and Technology, China), Lejun Zhang (Yangzhou Univ., China)
8-5	IoT enabled Real-Time Indoor Air Quality Monitoring Platform on Cloud
	Sudan P. Uprety, Hyunuk Kim, Junyoung Jeong (Kookmin Univ., ROK), Yoosin Kim (Alticast Inc., ROK), Seung Ryul Jeong (Kookmin Univ., ROK)
8-6	Advanced energy wear leveling algorithm of sensory data network
	Sooyeon Park (Incheon National Univ., ROK), Moonseong Kim (Seoul Theological Univ., ROK), Woochan Lee (Incheon National Univ., ROK)

| 16:20-17:20, Mon, July 6, 2020 |

Session 9: Interactive Presentation Session I	
16:20-17:20, Mon, July 6, 2020	Chair: Dr. Seung Ryul Jeong (Kookmin Univ., ROK)
9-1	The Influence of Service Quality of E-Commerce on Consumer Satisfaction Degree and Repurchase Intention-the Case of Leisure Food E-Commerce in China
	Lanmeng Wu, Ziyang Liu (Kyonggi Univ., ROK)
9-2	The integrated execution environment for containers in HPC
	Joon Woo, Gouhua Lee, Taeyoung Hong (Korea Institute of Science and Technology Information, ROK)
9-3	The Effectiveness of Non-Face-to-Face Creativity Class on University Students' Creativity Convergence Competency and Grit
	Chungyun Kim (Kyonggi Univ., ROK)
9-4	Vehicle collision risk assessment via convolutional recurrent neural network
	Daewoong Hwang (Yonsei Univ., ROK)
9-5	A study on "Fire Prevention Algorithm" by Threshold Temperature and Behavior Method for Realization of Social Safety
	Tae-Ho Hwang, Kang Yoon Lee (Gachon Univ., ROK)
9-6	An Enhancement of Post-responsiveness of N-MTD based on Adaptation of CTI
	Sang Seo, DoHoon Kim (Kyonggi Univ., ROK)

| 16:20-17:20, Mon, July 6, 2020 |

Session 9: Interactive Presentation Session Ⅰ	
16:20-17:20, Mon, July 6, 2020	Chair: Dr. Seung Ryul Jeong (Kookmin Univ., ROK)
9-7	Technology to support mobile virtual training using high-precision 3D spatial information
	Minho Son, Ilryong Kweon (PODO inc., ROK)
9-8	High Precision BIM(Building Information System) 3D Model Data Service Spatial Segmentation Improvement Method
	MoonHee Lee, JinWook Jang, KiYoung Kim (Infra Information Technology, ROK)
9-9	Quantitative Adversary Evaluation Metric for SCADA System
	Jungsuk Oh (Agency for Defense Development, ROK)

Session 10: Interactive Presentation Session Ⅱ	
16:20-17:20, Mon, July 6, 2020	Chair: Dr. Seokhoon Kim (Soonchunhyang Univ., ROK)
10-1	Blockchain-based Security Management of CCTV Images in Smart City
	Bobby Gerarado (West Visayas State Univ., Philiphines), Jaewan Lee (Kunsan National Univ., ROK), Min-Goo Kang (Hanshin Univ., ROK)
10-2	Performance analysis and comparison between LTE-V2V and IEEE 802.11p DSRC V2V Communication
	Sihun Heo, Jong-Moon Chung (Yonsei Univ., ROK)
10-3	Video Partial Copy Detection using CNN-based Visual Words Inverted File and Temporal Network
	Jinha Song, Minji Kang, Minsoo Jeong, Jaechan Ryu, Jongho Nang (Sogang Univ.,ROK)

Session 10: Interactive Presentation Session II	
16:20-17:20, Mon, July 6, 2020	Chair: Dr. Seokhoon Kim (Soonchunhyang Univ., ROK)
10-4	CNN based Segment-level Fingerprint for Video Partial Copy Detection
	Minsoo Jeong, Jinha Song, Jongho Nang (Sogang Univ., ROK)
10-5	Learning Media on Teaching Mathematics based on Augmented Reality
	Kalaphath Kounlaxay, Dexiang Yao, Syung-Og An (Pai Chai Univ, ROK), Jinwook Chang (HRG Inc., ROK), Soo Kyun Kim (Jeju National Univ., ROK)
10-6	Explaining Deep Learning Decision using LIME for Sensor-based Activity Recognition
	Md. Zia Uddin (SINTEF AS, Norway)
10-7	Classifying method based on Malware Behavior using Back Propagation Neural Network
	Gun-Yoon Shin, Dong-Wook Kim, Sung-Sam Hong (Gachon Univ., ROK)
10-8	Research on Response to Malicious Insider Threats using Feature Importance Analysis
	Dong-Wook Kim, Gun-Yoon Shin, Sung-Sam Hong (Gachon Univ., ROK)
10-9	Evaluation of Weather data, Power Demand and SMP Prediction Model by using LightGBM
	Yun-Jae Shin, KangYoon Lee (Gachon Univ., ROK)

| 09:30-11:00, Tue, July 7, 2020 |

Session 11: Workshop of Fourth Industrial Revolution Technology: Network & Security 09:30-11:00, Mon, July 7, 2020	Chair: Dr. Soo-Kyun Kim (Jeju National Univ., ROK)
11-1	An Efficient Resource Provisioning Scheme based on Machine Learning for Heterogeneous Internet of Things
	Sa Math, Prohim Tam, Chaebeen Nam, Seokhoon Kim (Soonchunhyang Univ., ROK)
11-2	Financial Fraud Detection adopting Distributed Deep Learning in Big Data
	Priyanka Purushu (AT&T, USA), Jongwook Woo (California State Univ., Los Angeles, USA)
11-3	BP Neural Network based RFID Indoor Location Method
	Chengbo Zhang (Nanjing Univ. of Information Science and Technology, China), Haoran Pei (Anqing Normal Univ., China), Zilong Jin (Nanjing Univ. of Information Science and Technology, China), Lejun Zhang (Yangzhou Univ., China)
11-4	Gaussian Process for Uncertainty in Predictive Analysis
	Oakyoung Han, Jaehyoun Kim (Sungkyunkwan Univ., ROK)
11-5	Cross-Architecture Linux Malware Classification Method based on Binary Lifting
	Hae-Seon Jeong, Jin Kwak (Ajou Univ., ROK)
11-6	Detecting Technique of Rowhammer Malware Based on Static Analysis
	Minkyung Lee, Deuk-Hun Kim, JIN KWAK (Ajou Univ., ROK)

Venue Information

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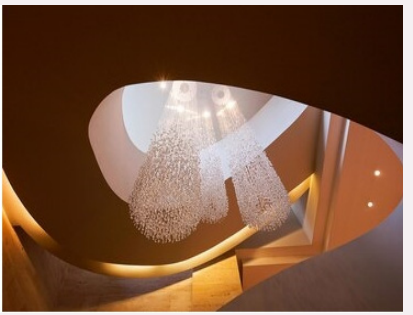

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