The International Conference on Big data, IoT, and Cloud Computing (BIC 2017)

August 22-24, 2017
Jeju, Korea

Organized by

KIPS CSWRG

2017 International Conferences

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

- August 22-24, 2017, Jeju, Korea
- http://www.bic-conference.org/2017

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

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

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

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

The 12th International Conference on Multimedia and Ubiquitous Engineering (MUE2018)

- April 23-25 2018, Salerno, Italy
- http://www.mue-conference.org/2018

The 13th International Conference on Future Information Technology (FutureTech2018)

- April 23-25 2018, Salerno, Italy
- http://www.futuretech-conference.org/2018

Message from the BIC 2017 General Chairs

The 2017 International Conference on Big data, IoT, and Cloud Computing will be held in Jeju, Korea, August 22-24, 2017. The BIC 2017 is the newly renamed conference from highly successful series of the International Conference on Ubiquitous Computing Application and Wireless Sensor Network (UCAWSN) - 4th UCAWSN (July, 2016), 3rd UCAWSN (July, 2015), 2nd UCAWSN (July, 2014), and 1st UCAWSN (July, 2013) since 2013.

The BIC 2017 will be the most comprehensive conference focused on Big data, IoT, and Cloud Computing (BIC). The BIC 2017 will provide an opportunity for academic and industry professionals to discuss the latest issues and progress in the area of BIC such as model, algorithms, applications, services, performance and reliability for Big data, IoT, Cloud Computing. Also, the conference will publish high-quality papers which are closely related to the various theories and practical applications in Big data, IoT, and Cloud computing. Furthermore, we expect that the conference and its publications will be a trigger for further related research and technology improvements in those important subjects. Accepted and presented papers highlight new trends and challenges of Computer Science and its Applications. The presenters showed how new research could lead to novel and innovative applications. We hope you will find these results useful and inspiring for your future research.

We would like to express our sincere thanks to Doo-soon Park (SoonChunHyang University, Korea), James J. (Jong Hyuk) Park (SeoulTech, Korea), and Young-Sik Jeong (Dongguk University, Korea). Our special thanks go to the Program Chairs, all Program Committee members and all the additional reviewers for their valuable efforts in the review process, which helped us to guarantee the highest quality of the selected papers for the conference.

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

BIC 2017
General Chairs

Gangman Yi, Dongguk University, Korea
Han-Chieh Chao, National Ilan University, Taiwan
Jungho Kang, Soongsil University, Korea
Qun Jin, Waseda University, Japan
Yi Pan, Georgia State University, USA

KIPS Korea Information Processing Society
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Message from the BIC 2017 Program Chairs

Welcome to the BIC 2017 which will be held in Jeju, Korea on Aug 14~16, 2017. The BIC 2017 provides an opportunity for academic and industry professionals to discuss the latest issues and progress in the area of Computer Science. In addition, the conference contains high quality papers which are closely related to the various theories and practical applications in Computer Science. Furthermore, we expect that the conference and its publications will be a trigger for further related research and technology improvements in this important subject. The BIC 2017 contains high quality research papers submitted by researchers from all over the world. Each submitted paper was peer-reviewed by reviewers who are experts in the subject area of the paper. Based on the review results, the Program Committee accepted papers.

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

We would like to give my special thanks to Doo-soon Park (SoonChunHyang University, Korea), James J. (Jong Hyuk) Park (SeoulTech, Korea), Young-Sik Jeong (Dongguk University, Korea) as the Steering Committee of BIC for their strong encouragement and guidance to organize the conference. We would like to thank BIC 2017 General Chairs for their advices to make possible organization of The BIC 2017. We would like to express special thanks to execute members for their timely unlimited support.

BIC 2017
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Jaehwa Chung, Korea National Open University, Korea
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Kyung-Soo Lim, ETRI, Korea

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Plenary Speaker

The 4th wave, Smart Society and Convergence Innovation Economy

Seang-Tae Kim Ph.D.

Congressman
National Assembly
Korea

Abstract

The inappropriate parts of society require a variety of changes to improve and develop society. I must point out the importance of ICT to energize social and economic development. ICT can be the focus point of a convergent economic system and the method for the success of the Korean government. Thus, I want to touch on the issue of innovative strategies and the advantages ICT can provide for Korea. I propose a new government system to enhance Korean economic system convergence. The new system will feature cooperation, openness, creativeness and communication. In order to accomplish a new convergent economic system, the new government body will have to break away from outmoded systems and traditions and adopt a fresh, modern approach.

Biography

Mr. Seang-Tae Kim is a Congressman at the National Assembly of the Republic of Korea. He is one of the most active lawmakers in the Science, ICT, Future Planning, Broadcasting and Communications Committee where all legislations regarding the ICT sector are discussed and agreed. Information Technology has been a key driving force of economic development in Korea since the early 2000s. After suffering a financial crisis in the late 1990s, Korea improved its economic fundamentals with Information Technology. Companies introduced advanced IT system to enhance efficiency and transparency in business decisions. Government encouraged Telcos' broadband rollout which boosted domestic demand. As a result, Korea was able to successfully recover from financial shock, and turn itself into a the global leader in transition to an information society. In 2005, Mr. Kim met extraordinary opportunity to become a member of ICT Committee of the National Assembly, where he could directly involve in the policy making process for the country's successful transition to an information society. With his expertise and experience in academia and public sector, Mr. Kim was appointed as the president of National Information Society Agency(NIA) in 2008. Under his leadership for five years, NIA played a critical role in establishing national strategies for convergence and innovation, as well as solving problems such as digital divide and privacy issue. After being elected as a congressman in 2016, Mr. Kim continues to make effort, as a lawmaker, to reform the ICT regulation system in Korea. Currently he is developing a new legal foundation, which supports industry growth and maximizes consumer welfare under rapidly changing environment. As a milestone, he recently proposed an amendment to the Telecom Business Law. Mr. Kim pursues human-centric convergence and innovation. He published more than 20 papers and books including "Digital Government", and "Korea's Future Strategy toward Smart Society". He also held various positions in the international organizations including ITU/UNESCO Broadband Commission.

Keynote Speaker

Data-Driven Analysis of Human Dynamics using Wireless Signals

Jian-Nong Cao, Ph.D.

Chair Professor and Head
Hong Kong Polytechnic University
Hong Kong

Abstract

Human dynamics refer to movement and interactions of large crowd. Analysis of human dynamics is important for both social science and computer science. It enables a wide range of applications in many areas like marketing, management, and sociology. For example, understanding customers' shopping behaviors is vital for retailers to adapt their marketing strategies. However, studying human dynamics requires massive data, which is non-trivial to collect. Previous research mainly focuses on phone call records collected by network operators to study coarse-grained human activities. Nowadays, Wi-Fi-enabled smartphones are increasingly ubiquitous throughout the world and open up a great opportunity to collect massive human activity data in an effective and efficient way. On the other hand, however, it also raises new challenges due to vulnerability and sparsity of wireless signal. Besides, how to extract effective features from Wi-Fi packets still remains an open challenge. In this talk, I will introduce recent advances in human dynamics and then discuss opportunities and challenges followed by future research directions. I will also describe our recent work on analysis of human dynamics using Wi-Fi.

Biography

Dr. Cao is currently a chair professor and head of the Department of Computing at Hong Kong Polytechnic University, Hung Hom, Hong Kong. His research interests include parallel and distributed computing, wireless networks and mobile computing, big data and cloud computing, pervasive computing, and fault tolerant computing. He has co-authored 3 books, co-edited 9 books, and published over 300 papers in major international journals and conference proceedings. He is a fellow of IEEE, a senior member of China Computer Federation, and a member of ACM. He was the Chair of the Technical Committee on Distributed Computing of IEEE Computer Society from 2012 - 2014. Dr. Cao has served as an associate editor and a member of the editorial boards of many international journals, including ACM Transactions on Sensor Networks, IEEE Transactions on Computers, IEEE Transactions on Parallel and Distributed Systems, IEEE Networks, Pervasive and Mobile Computing Journal, and Peer-to-Peer Networking and Applications. He has also served as a chair and member of organizing / program committees for many international conferences, including PERCOM, INFOCOM, ICDCS, IPDPS, ICPP, RTSS, DSN, ICNP, SRDS, MASS, PRDC, ICC, GLOBECOM, and WCNC. Dr. Cao received the BSc degree in computer science from Nanjing University, Nanjing, China, and the MSc and the Ph.D degrees in computer science from Washington State University, Pullman, WA, USA.

Workshop Keynote Speaker

Smart Wellness and Healthcare Systems

Fei Hao, Ph.D.

Associate Professor
Shaanxi Normal University
China

Abstract

Social Computing, the main computing paradigm for the social spaces in ubiquitous computing, are playing a critical role in analyzing the behavior of users and their interactions over social networks. Importantly, the knowledge and social computational intelligence hiding behind social networks can help us to uncover and understand the behaviors and organization styles of users in social networks. Soft Computing, rather than routine "hard" computing, is a procedure that exploits the tolerance for imprecision, uncertainty, and partial truth in order to achieve tractability, robustness, low cost solutions, and close to human mind. The soft computing technologies like fuzzy logic, rough sets, soft sets, artificial neural networks and evolutionary algorithms have been applied successfully to data mining, natural language processing, bio-informatics, medical and u-health, social sciences, manufacturing, economics, and business. Aiming to bridge the research gap between social network analysis and soft computing, in this talk, I will present a series of comprehensive soft computing-based analytical theories for the exploration of topological structures and the promising applications of social networks, and then discuss the opportunities and insights in Health 3.0.

Biography

Dr. Hao is an associate professor, in the School of Computer Science, Shaanxi Normal University, China, and he is also an executive director of Shanxi Association of Experts and Scholars (SAES) Information Branch. He received the B.Sc. degree in Information and Computing Science and the M.Sc. degree in Computer Software and Theory from Xihua University, China, in 2005 and 2008, respectively, and the Ph.D. degree in Computer Science and Engineering from Soonchunhyang University, South Korea, in 2016. He worked as a research fellow at the School of Computer Science and Technology, Huazhong University of Science and Technology, China from 2012 to 2014. Since 2016, he has been with the School of Computer Science, Shaanxi Normal University, China, where he is currently an associate professor. His research interests include social computing, soft computing, big data analytics, pervasive computing, and data mining. Dr. Hao holds a world-class research track record of publication in the top international journals and the prestigious conferences. He has published more than 60 papers in the leading international journals and conference proceedings, such as IEEE Transactions on Parallel and Distributed Systems, IEEE Transactions on Services Computing, IEEE Communications Magazine, IEEE Internet Computing, ACM Transactions on Multimedia Computing, Communications and Applications as well as GlobeCom. In addition, he was the recipient of five Best paper awards from CUTE 2016, UCASWSN 2015, MUE2015, IEEE GreenCom 2013 and KISM 2012 conferences, respectively. He was also the recipient of the IEEE Outstanding Leadership Award at IEEE CPSCom 2013 and the 2015 Chinese Government Award for Outstanding Self-Financed Students Abroad. Since 2017, he has joined JIPS (Journal of Information Processing Systems) editorial board, where he is currently an associate editor, and he is an initiator and general chair of IEEE SMMA, IWSCA and DSCI workshops. He is also a member of ACM, CCF and KIPS.

PROGRAM SCHEDULE FOR BIC 2017

Day 1, Aug. 22, 2017				
Time	**Min**	**HALL A**	**HALL B**	**HALL C**
08:40-09:00	20	**Registration**		
09:00-10:30	90	**Session A-1** Chair : Wei Liu	**Session B-1** Chair : Jin Liu	**Session C-1** Chair : Byoungwook Kim
10:30-10:40	10	**Coffee Break**		
10:40-12:00	80	**Session A-2** Chair : Jong-myon Kim	**Session B-2** Chair : Kiwon Yeom	**Session C-2** Chair : Jin Wang
12:00-13:00	60	**Lunch**		
13:00-13:30	30	**The 4th wave, Smart Society and Convergence Innovation Economy** **Seang-Tae Kim Ph.D.** Congressman at the National Assembly of the Republic of Korea Chair: Kwang-il Hwang		
13:30-14:00	30	**Data-Driven Analysis of Human Dynamics using Wireless Signals** **Jian-Nong Cao, Ph.D.** Professor at Hong Kong Polytechnic University Chair: Kwang-il Hwang		
14:00-14:10	10	**Coffee Break**		
14:10-15:30	80	**Session A-3** Chair : Youngkon Lee	**Session B-3** W1-HRH 2017 Chair : Jun-Ho Huh	**Session C-3** W2-Fintech Security Chair : Yoojae Won
15:30-15:40	10	**Coffee Break**		
15:40-17:00	80	**Session A-4** Chair : JinSoo Park	**Session B-4** Chair : Soohyun Cho	**Session C-4** W3-Smart Wellness and Healthcare SystemsHS Chair : Doo-soon Park
18:00-		**Banquet (HALL B)**		

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Day 2, Aug. 23, 2017		
Time	**Min**	**HALL –A**
10:00-12:00	120	**Session A-5** W4-Convergence Security Chair : Kyung-Soo Lim
13:00-15:00	120	Organizing Committee Meeting I (Only for Invited Members)
16:00-17:30	90	Local Arrangement Committee Meeting (Only for Invited Members)

Day 3, Aug. 24, 2017		
Time	**Min**	**HALL -A**
10:00-12:00	120	**Session A-6** Chair : Daewon Lee
13:00-15:00	120	Executive Meeting - Organized by BIC 2017 (Only for Invited Members)
16:00-17:30	90	Organizing Committee Meeting II (Only for Invited Members)

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

DETAILED SCHEDULE FOR THE BIG DATA, IOT, AND CLOUD COMPUTING (BIC 2017)

Day 1, Aug. 22, 2017 (Tuesday)

08:40-09:00 Registration

09:00-10:30 Session A-1 : Big Data
(HALL A)
(Chair: Wei Liu)

1. **Extracting the Web-Scale Topological Relations Based on Hadoop MapReduce**
   Seok-Jun Lee, In-Cheol Kim
2. **Large-Scale Qualitative Temporal Reasoning Based on MapReduce Framework**
   Jonghoon Kim, Incheol Kim
3. **A Study on Subsequence Similarity Join in Time Series Data Using MapReduce**
   Kyounghyun Park, Hee Sun Won, Keun Ho Ryu
4. **Flu-rate Prediction System Based on Social Network Big Data Analytics**
   Mihui Kim, Shikha Verma, Younghee Park
5. **Dynamic billboard calibration for remote mobile robot control systems**
   Phuong Minh Chu, Seoungjae Cho, Kyungeun Cho
6. **Detect Alzheimer's disease by Multimodal Deep Learning Network using Convolutional Autoencoder**
   Tien-Duong Vu, Ngoc-Huynh Ho, Jong-Min Joo, Soo-Hyung Kim, Young-Chul Kim, Hyung-Jeong Jang, Jahae Kim, Ho-Chun Song
7. **Improvement of Personal Information Detection Performance by Classification of Trained Data**
   Youngkyung Lee, Jinho Song, Yoojae Won
8. **A Study on Local Consumer Behavior User Modeling for Extended O2O Services**
   Jinah Kim, Nammee Moon
9. **Object Recognition in Low Resolution Images by Combining Deep Neural Networks**
   Jeongin Seo, Injae Choi, Hyeyoung Park

09:00-10:30 Session B-1 : ICT Applications and Services
(HALL B)
(Chair: Jin Liu)

1. **Design of Bloom Filter-based Data De-duplication Algorithm for Efficient Data Management**
   Young-Hwan, Nam-Uk Lee, Hyung-Jun Kim, Seok-Cheon Park
2. **Design of Comparison Verification Algorithm for Information System Data Quality**

Management
Young-Hwan Jang, Nam-Uk Lee, Hyung-Jun Kim, Seok-Cheon Park

3. **Design of Nonlinear Data-based Wellness Content Recommendation Algorithm**
   Young-Hwan Jang, Seung-Su Yang, Hyung Jun Kim, Seok-Cheon Park
4. **Factors Affecting e-Impression Formations based on SNS**
   Su-e Park, Hun Choi
5. **A Study on Practical Technology for Sensor IoT for Gas Safety**
   JeongSeok Oh
6. **Customized Recommendation System for SaaS Aggregation Service**
   Yun Cui, Myoungjin Kim, Khongmin Kwon, Jongjin Jung, Hanku Lee
7. **Real-time 3D Scene Modeling for LiDAR Point Cloud**
   Seoungjae Cho, Phuong Minh Chu, Kyungeun Cho
8. **Design and Development of Smart Application for Induction Control**
   Cheol Sim, Min Choi

09:00-10:30 Session C-1 : Internet of Things
(HALL C)
(Chair: Taek-Young Youn)

1. **Maximum Stack Memory Monitoring Method Assisted by Static Analysis of the Stack Usage Profile**
   Kiho Choi, Seongseop Kim, Moon Gi Seok, Jeonghun Cho, Daejin Park
2. **DEVS-based Embedded Device Modeling and Simulation for Application-Specific IoT prototyping**
   Moon Gi Seok, Tag Gon Kim, Dongkyu Lee, Kiho Choi, Jeonghun Cho, Daejin Park
3. **Energy Efficient File Sharing Scheme for PAN in Heterogeneous Wearable Devices Environment**
   Young-Hoon Park, Jung-Eun Park, Kwangman Ko
4. **Location Recognition System using Random Forest**
   Sunmin Lee, nammee Moon
5. **Smart Crossing System for Pedestrian safety based on Internet of Things**
   Kwang Eun An, Sung Won Lee, Young Ju Jeong, Dongmahn Seo
6. **SINR Based MCS Level Adaptation in CSMA/CA Wireless Networks**
   Soohyun Cho
7. **Implementation of NFC-Based Smart-Drug Information Management System**
   Kyeong-Rae Cho, Tae-Bok Yoon
8. **IoT Gateway Development for AEO application**
   Haedong Lee, Kiyoung Moon
9. **Requirements for Internetworking Terrestrial Sensor Networks and Underwater Acoustic Sensor Networks**
   Pan-Jun Kim, Donghyun Shin, Changhwa Kim
10. **Digital Shredder: Secure Data Storage without Encryption**
    Taek-Young Youn, Nam-Su Jho

10:30-10:40 Coffee break

10:40-12:00 Session A-2 : ICT Applications and Services
(HALL A)
(Chair: Jong-myon Kim)

1. **Vision-based Mobile Robot Localization Method using Two-dimensional Barcode Detection**
   Jong Hwan Beck, Myeong Suk Pak, Sang Hoon Kim
2. **Frame Rate Control Buffer Management Technique for High-quality Real-time Video Conferencing System**
   SangHyong Kim, Yoojae Won
3. **Data set construction and performance comparison of machine learning algorithm for detection of unauthorized AP**
   Doyeon Kim, Dongkyoo Shin, Dongil Shin
4. **System Providing Air Pollution Information Using LED Sculpture**
   Hyunwoo Lee, Dongil Shin, Dongkyu Shin
5. **Design and Implementation of NAND Simulator for Bit Error Rate Model**
   Kijin Kim and Seung-Ho Lim
6. **Reliable Fault Diagnosis of Bearings Using Convolutional Neural Networks in Vibration Patterns**
   Dileep Appana, Manjurul Islam, Jong-Myon Kim
7. **Fault Diagnosis of Rolling Element Bearings Using Complex Envelope Spectrum and Stacked Autoencoders**
   Sohaib Muhammad, Jong-Myon Kim

10:40-12:00 Session B-2 : Cloud Computing
(HALL B)
(Chair: Kiwon Yeom)

1. **Issues and Concerns: Record Management in Cloud Service**
   Youngkon Lee, Ukhyun Lee
2. **Validating CPU Frequency Control on the Energy of Clouds**
   Youngpil Kim, Chuck Yoo
3. **Study of Application Design Using File Encryption in Cloud Storage**
   Minseok Sohn, Junghoon Seo, Yoojae Won
4. **An Efficient Resource Management Method for DASH Streaming in Cloud Environment**
   Linh Van Ma, Jaehyung Park, Suil Choi, Yonggwan Won, Jinsul Kim
5. **A Study on the Software as a Service Cloud Scientific Computing Platform for Education and Research in Nanoscience**
   Inho Jeon, Jerry H. Seo, Jongsuk Ruth Lee, Kumwon Cho, Hoon Ryu
6. **Development of Virtual Enterprise Workbench to Solve Computational Science Problem**
   Yejin Kwon, Inho Jeon, Sik Lee, Kumwon Cho, Jerry H. Seo
7. **A Solution for Reducing Redistribution Costs of HAIL**
   TaeHyuk Kim, MinSeok Lee, DooHo Choi, TaekYoung Youn
8. **Laboratory Safety Sensor Data based Accident Prediction Study**
   Ki-Su Yoon, Seoung-Hyeon Lee, Jae-Pil Lee, Jae-Kwang Lee
9. **Self-Organizing of Autonomous Devices by Biological Approach**
   Kiwon Yeom

10. **Research on cloud-based web application malware detection methods**
    Ki-hwan KIM, Dong-Il LEE, Yong-Tae Shin

10:40-12:00 **Session C-2 : ICT Applications and Services**
(HALL C)
(Chair: Jin Wang)

1. **Essential Protein Discovery Based on Improved Particle Swarm Optimization**
   Wei Liu, Jin Wang, Ling Chen, Bin Li, Bolun Chen, Haiyan Hong
2. **An Efficient Method for Essential Proteins Identifying Based on Genetic Algorithm**
   Wei Liu, Qiangmei Wu, Jin Wang, Bolun Chen, Ling Chen
3. **Influence Maximization Based on Propagation Path Analysis Under Independent Cascade**
   Model Wei Liu, Xin Chen, Bolun Chen, Jin Wang, Ling Chen
4. **Data Stream Clustering Algorithm Based on Bucket Density for Intrusion Detection**
   Chunyong Yin, Lian Xia, Jin Wang, Seungwook Min
5. **Strategies for Data Stream Clustering Applied in Anomaly Detection**
   Chunyong Yin, Lian Xia, Jin Wang, Seungwook Min
6. **Distributed Approach for the Security of P2P Wireless Network**
   Chunyong Yin, Nimenya Stacey, Tatiana Moreira Beita, Jin Wang, Seungwook Min
7. **A PSO based Coverage Hole Patching Scheme for WSNs**
   Jin Wang, Chunwei Ju, Hye-jin Kim, R. Simon Sherratt, Sungyoung Lee
8. **A Novel Chinese Word Segmentation Model based on Recurrent Neural Networks**
   Jin Liu, Li Lin, Yunlu Liaozheng, Jin Wang, Hye-jin Kim
9. **Conditional Generative Adversarial Networks for Multi-class Handwriting Characters Generation**
   Chenkai Gu, Jin Liu, Jin Wang, Geumran Youn, Jeong-Uk Kim
10. **Stochastic Conjugate Gradient Optimization for Neural Network**
    Haoliang Ren, Jin Liu, Minghao Gu, Geumran Youn, Jeong-Uk Kim
11. **Study on Manipulator Hydrodynamic Calculation Method Based on the Microtomy Theory**
    Hongde Qin, Chuanqi Liu, Gang Wang
12. **Research on the Structure Design and Control Technology of Bionic Fish**
    Hongde Qin, Xiang Yu, Chuanqi Liu
13. **An Adaptive Circumference Method to Identify Regional and Local Gravity Fields**
    Jinwei Fang, Fengxu Zhang, Hongtao Bai, Xiaomeng Sun
14. **Mining Association Rules of Ocean Data based on FP-growth Algorithm**
    Minghao Zhao, Chengquan Hu, Kai Wang, Lili He, Yu Jiang

12:00-13:00 **Lunch break**

13:00-13:30 **Plenary Speaker**
(Chair: Kwang-il Hwang)

The 4th wave, Smart Society and Convergence Innovation Economy

Ph.D. Seang-Tae Kim
Congressman at the National Assembly of the Republic of Korea

13:30-14:00 Keynote Speaker
(Chair: Kwang-il Hwang)

Data-Driven Analysis of Human Dynamics using Wireless Signals

Ph.D. Jian-Nong Cao
Professor at Hong Kong Polytechnic University

14:00-14:10 Coffee break

14:10-15:30 Session A-3 : Big Data
(HALL A)
(Chair: Youngkon Lee)

1. **Recognition of Multiple Facial Attributes through Learning of Joint Relationship among Attributes**
   Changhun Hyun, Jeongin Seo, Hyeyoung Park
2. **A Study on the Performance and Influence of Patent Development Strategy in ICT Convergence Technology Using the Big Data**
   Kyeong-Rae Cho, Su-Been Cho
3. **Incremental learning method of Cyber ISR in closed network**
   GyeongIl Shin, DongIl Shin, DongKyoo Shin, Hosang Yooun
4. **Study on customer rating using RFM and K-Means**
   Hyun Jung Ji, Gyeong Il Shin, Dong Il Shin, Dong Kyoo Shin
5. **A Data Stream Segmentation Technology for HUD Tag-ID Located in Korean Food Restaurant Shop**
   Jupil Cho, Jaesang Cha, Byungjun Min
6. **Dynamic Host Mutation Architecture for Moving Target Defense**
   Kyungmin Park, Samuel Woo, Daesung Moon, Hoon Choi
7. **Technical Trend of Attack Graphs for Automated Network Security Assessment**
   Jooyoung Lee, Daesung Moon, Ikkyun Kim, Youngsuk Lee

14:10-15:30 Session B-3 : Workshop on HRH 2017
(HALL B)
(Chair: Jun-Ho Huh)

1. **Design and Implementation of Mobile Fingerprint Recognition and Automatic Log-In Platform Framework**
   Jun-Ho Huh, Kyungryong Seo
2. **Anonymous Signature with Signer-Controlled Opening Capability**
   Sungwook Eom, Eunsung Lee, Pil Joong Lee
3. **Group Signature with Signer-Controlled Opening Capability: Separate Token Generator**
   Sungwook Eom, Eunsung Lee and Pil Joong Lee
4. **Group Signature with Restrictive Linkability**

Sungwook Eom

5. **The Personal Information Overload Effect Information Protective Responses in the Internet of Thing(IoT) Era**
   Wonguen So, Hakyun Kim
6. **Operational Reliability Analysis of Guided Weapon Systems**
   Ju-seok Ha, Kyung-mo Kim
7. **A Study on Optimal Warranty Period for Repairable Weapon Systems**
   Ju-seok Ha, Kyung-mo Kim
8. **Study on Personal Information Leak Detection Based on Machine Learning**
   Sangdo Lee, Hanchul Woo, Yangtae Shin
9. **The Direction of Information Security Control Analysis Using Artificial Intelligence**
   Sangdo Lee, Yangtae Shin
10. **A Study of Service Quality in Multi-Cloud Computing**
    Sangdo Lee, Yangtae Shin
11. **A Cancer Tissue Identification Technique Using Cancer Cell Big Data: Machine Learning Approach**
    Jun-Ho Huh, Jong Hyuk Park

14:10-15:30 Session C-3 : Workshop on Fintech Security
(HALL C)
(Chair: Yoojae Won)

1. **Multi-sensor Data Collection and Data Fusion: A Step towards Self Driving Car**
   Shoaib Azam, Aasim Rafique, Ahmed Muqeem Sheri, Moongu Jeon
2. **Pairwise Relation Analysis and Quality Estimation of Classical Chinese Poetry in Ancient Korea**
   Shohrukh Bekmirzaev, Byoung-Chan Lee, Tae-Hyong Kim
3. **Method to modify the Android manifest file for dynamic analysis of Android apps**
   Suh Yoo Lee, Junhoo Park, Jaecheol Ryu
4. **Smart Automated Sales System with Blockchain-based Data Storage and Management**
   Minjae Yoo, Yoojae Won
5. **Study on Malicious Code Behavior Analysis Using Windows Kernel Function Call Sequence**
   Kangsik Shin, Yoojae Won
6. **A Study of Multilateral Context-Awareness based Ransomware Detection and Response Method**
   Sangmoon Jung, Heebeom Kim, Yoojae Won

15:30-15:40 Coffee break

15:40-17:00 Session A-4 : ICT Applications and Services
(HALL A)
(Chair: JinSoo Park)

1. **Measurement Framework for Measuring Firm Smart Business Capability in a Smart Business Environment**

Chui Young Yoon

2. **Integrity Assurance Method of Distributed Personal Information Access Records**
   Manki Baek, Yoojae Won
3. **A Study on User Modeling through Location-based Smart Media Data Analysis**
   HyeJin Song, Nammee Moon
4. **An Enhanced Digital Blood Pressure Estimation by using P-Peak Analysis**
   Boyeon Kim, Munseong Jeong, Yunseok Chang
5. **Patch Integrity Verification using Multiple Digital Signatures**
   Junhee Kim, JinHo Song, Yoojae Won

15:40-17:00 Session B-4 : Internet of Things
(HALL B)
(Chair: Soohyun Cho)

1. **Sleep Scheduling to Reduce Energy Consumption in Low Power Wide Area Networks**
   Dae-Young Kim, Seokhoon Kim
2. **Vulnerability of Blockchain-based Firmware Verification**
   Jea-Min Lim, Youngpil Kim, Chuck Yoo
3. **A Design of the CoAP Adaptor for Communication between DDS-based Adaptors and External Devices**
   Gil-Tak Oh, Moon-Ki Back, Kyu-Chul Lee
4. **R-tree Spatial Cloaking based Task Assignment Method for Crowdsourcing System**
   YAN LI, ByeongSeok Shin
5. **Threat Analysis for an In-Vehicle Telematics Control Unit**
   Sungbum Lee, Jong-Hyouk Lee, Byoungsoo Koh

15:40-17:00 Session C-4 : Workshop on Smart Wellness and Healthcare SystemsHS
(HALL C)
(Chair: Doo-soon Park)

Workshop Keynote Speaker
Ph.D. Fei Hao
School of Computer Science, Shaanxi Normal University, China

1. **θ-Iceberg Core Decomposition in Graphs**
   Fei Hao, Khamphaphone Xinchang, Doo-Soon Park
2. **Sleep Monitoring System using Kinect and Thermovision**
   Kwi-Bin Seo, Sung-Yeup Kim, Min Hong
3. **Electropulsegraph Waveform Classification Based on Deep Learning Technologies**
   JinSoo Park, Doo-soon Park, Dong Hag Choi, You-Boo Jeon
4. **A Model of a Dialogue Supporting System using FSM based Planner for Emergency Calls**
   Keonsoo Lee, Yunyoung Nam, Doo-Soon Park
5. **Development of A Textile Capacitive Proximity Sensor and Gait Monitoring System for Smart Healthcare**
   Changwon Wang, Jong Gab Ho, Doo-Soon Park, Se Dong Min
6. **Photosensors based Motion Artifacts Cancellation**

Hooseok Lee, Hoon Ko, Jinseok Lee

7. **Virtual Reality-Based Exercise Game for Finger Rehabilitation Following Chronic Stroke**
   Hee-Woo Park, Doo-Soon Park, HwaMin Lee
8. **Smartphone Built-in Microphone based Lung Function Test**
   Heewon Chung, Hoon Ko, Hooseok Lee, Jinseok Lee
9. **Towards the Development of Tele-rehabilitation System based on Virtual Reality Environment and Cloud Service**
   Ye-Rin Cha, Jung-Yeon Kim, Bong-Keun Jung

Day 2, Aug. 23, 2017 (Wednesday)

10:00-12:00 **Session A-5 : Workshop on Convergence Security**
(HALL A)
(Chair: Kyung-Soo Lim)

1. **New User Management Technique for Stronger Privacy and its Application to Storage-based Services**
   Taek-Young Youn, Ku-Young Chang
2. **A Study on the Application of Unidirectional Security Gateway to Enhance the Inter-VTS Exchange Format Service Security**
   Yong-Kyun Kim, Seoung-Hyeon Lee, Young-jun Heo
3. **Method for Indoor Positioning using BITON and Linear Kalman Filter**
   Seoung-Hyeon Lee, Kyung-Soo Lim
4. **The Proposal for Codec-Independent Video Privacy Masking and Evaluation**
   GeonWoo Kim, SoHee Park, BumSuk Choi, Kyung-Soo Lim
5. **Image Preprocessing Revisited for Robust Face Recognition**
   Seon Ho Oh, Geon-Woo Kim, Kyung-Soo Lim
6. **Large-Scale Person Re-identification via Adaptive Hierarchical Clustering**
   Seon Ho Oh, Seung-Wan Han, Bum-Seok Choi, Geon-Woo Kim, Kyung-Soo Lim
7. **A Functional Consideration for Cloud-based Video Surveillance Platform**
   Kyung-Soo Lim, Jong Wook Han, Geon-Woo Kim
8. **Vision-based Pointing Method for Contactless User Interface**
   SongGu Jin, MiYoung Nam, Phill Kyu Rhee
9. **Study of Protocol Classification using Deep Belief Networks**
   YoungGiu Jung, Dong Geon Lee
10. **A Study on Secure Requirements in Access Control for Cloud-based Intelligent Video Security Platform**
    Kyung-Soo Lim, Geon-Woo Kim
11. **Dynamic Computing Resource Allocation Scheduler using many-core for Rapid Computing Service based on DCV**
    Seok-Hyeon Han, GiSung Yu, He Mu, Young-Sik Jeong
12. **Efficient Resource Clustering Mechanism for Minimize Battery Consumption based on MRM Environment**

Youra Jeong, Hyun-Woo Kim, Gangman Yi, Young-Sik Jeong

13:00-15:00 **Organizing Committee Meeting I**

16:00-17:30 **Local Arrangement Committee Meeting**

Day 3, Aug. 24, 2017 (Thursday)

10:00-12:00 **Session A-6 : ICT Applications and Services**
(HALL A)
(Chair: Daewon Lee)

1. **The Resource Manager for Integrated Windows and Linux Environment**
   Daeyong Jung, HeeSeok Jeong, DaeWon Lee, Myungil Kim
2. **EEG Based on Smart Driving System for Intelligent Accident Management**
   Byung Wook Kwon, Jong Hyuk Park
3. **DSS-SL: Dynamic Signage System based on SDN with LiFi Communication for Smart Buildings**
   Pradip Kumar Sharma, Byung Wook Kwon, Jong Hyuk Park
4. **Dynamic OTP matching-based Authentication as a Service**
   NamYong Kim, Kyung Yeob Park, Jong Hyuk Park
5. **The Study on Data of Smart Home System as Digital Evidence**
   Jung Hyun Ryu, Seo Yeon Moon, Jong Hyuk Park
6. **An automatic gene annotation system for the organellar by maximizing the sequence similarity of references**
   Jaehee Jung, Mingeun Ji, Gangman Yi
7. **A Study on the Analysis and Prediction of Indoor Condensation in Buildings**
   Kwang-il Hwang, Kye young Kim
8. **Design of Block Chain based Website Falsification Monitoring System**
   Yong-hwan Jung, Jang-won Choi, Haeng-gon Lee, Tae-woong Kwon, Jung-suk Song, Joon-min Gil
9. **Behavior-based User Interface Design for UAV Controls**
   Jeonghoon Kwak, Yunsick Sung

13:00-15:00 **Executive Meeting – Organized by BIC 2017**

16:00-17:30 **Organizing Committee Meeting II**

Conference Venue

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