

# 2020 JIPS/KIPS-CSWRG Workshop

February 6-7, 2020, Yeongdo, Busan, Korea



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## Message from the 2020 JIPS/KIPS-CSWRG Workshop General Chairs

2020 JIPS/KIPS-CSWRG Workshop is the 1th event of the series of JIPS Workshops. February 6-7, 2020, Busan, Korea.

2020 JIPS/KIPS-CSWRG Workshop will be the most comprehensive conference focused on the various aspects of advances in computer science and its applications. 2020 JIPS/KIPS-CSWRG Workshop will provide an opportunity for academic and industry professionals to discuss the latest issues and progress in the area of 2020 JIPS/KIPS-CSWRG Workshop.

The papers included in the proceedings cover the following topics: Mobile and ubiquitous computing, Artificial Intelligence, Big Data, Dependable, reliable and autonomic computing, Security and trust management, Multimedia systems and services, Networking and communications, Database and data mining, Game and software engineering, Grid and scalable computing, Embedded system and software, Artificial intelligence, Distributed and parallel algorithms, Web and internet computing and IT policy and business management.

Our special thanks go to the Program Chairs: KIPS members 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.

2020 JIPS/KIPS-CSWRG Workshop General Chairs

Jun-Ho Huh, Korea Maritime and Ocean University, Korea (Leading Chair)  
Yeong-Seok Seo, Yeungnam University, Korea (Co-Chair)



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## Keynote Speaker



### JIPS 2020 Future Plans for Advanced IT Computing

#### **James J. (Jong Hyuk) Park, Ph.D.**

Professor at Department of Computer Science and Engineering, Seoul National University of Science and Technology (SeoulTech), ROK.

He received Ph.D. degrees from the Graduate School of Information Security, Korea University, Korea and the Graduate School of Human Sciences of Waseda University, Japan.

Dr. Park served as a research scientist at the R&D Institute, Hanwha S&C Co. Ltd., Korea from December 2002 to July 2007, and as a professor at the Department of Computer Science and Engineering, Kyungnam University, Korea from September 2007 to August 2009. He is currently employed as a professor at the Department of Computer Science and Engineering and the Department of Interdisciplinary Bio IT Materials, Seoul National University of Science and Technology (SeoulTech), Korea. Dr. Park has published about 400 research papers in international journals and conferences. He has also served as the chair, program committee chair or organizing committee chair at many international conferences and workshops. He is a founding steering chair of various international conferences including MUE, FutureTech, CSA, UCAWSN, etc. He is employed as editor-in-chief of Human-centric Computing and Information Sciences (HCIS) by Springer (SCIE IF=3.212), The Journal of Information Processing Systems (JIPS) by KIPS, and the Journal of Convergence (JoC) by KIPS CSWRG. He is also the associate editor or editor of fourteen international journals, including eight journals indexed by SCI(E). In addition, he has been employed as a guest editor for various international journals by such publishers as Springer, Elsevier, Wiley, Oxford University Press, Hindawi, Emerald, and Inderscience. Dr. Park's research interests include security and digital forensics, human-centric ubiquitous computing, context awareness, and multimedia services. He has received "best paper" awards from the ISA-08 and ITCS-11 conferences and "outstanding leadership" awards from IEEE HPCC-09, ICA3PP-10, IEE ISPA-11, and PDCAT-11. Furthermore, he received an "outstanding research" award from SeoulTech in 2014. Also, Dr. Park's research interests include humancentric ubiquitous computing, vehicular cloud computing, information security, digital forensics, secure communications, multimedia computing, etc. He is a member of the IEEE, IEEE Computer Society, KIPS, and KMMS.



## Tutorial Speaker



### SI: Smart Grid and Ocean

#### **Jun-Ho Huh, Ph.D.**

Assistant Professor of Dept. of Data Informatics, Korea Maritime and Ocean University, ROK.

He was born in Kyoto, Japan. He was finished the Cooperative Marine Science and Engineering Program, Texas A&M University at Galveston, United States of America in Aug. 2006. Received B.S. in Science Degree from Department of Major of Applied Marine Sciences (Currently Faculty of Marine Biomedical Sciences), And, B.S. in Engineering Degree (Double Major) from Department of Major of Computer Engineering from Jeju National University at Ara, Jeju, Republic of Korea in Aug. 2007. Also, completion of the Secondary School (Middle and High schools) Teacher Training Curriculum in accordance with Republic of Korea Secondary Education Act (Aug. 2007). Received M.A. in Education Degree from Department of Major of Computer Science Education, Graduate School of Education, Pukyong National University at Daeyeon, Busan, Republic of Korea in Aug. 2012. And completion of the Secondary School (Middle and High schools) Teacher Training Curriculum in accordance with Republic of Korea Secondary Education Act (Aug. 2012). Received the Ph.D. in Engineering Degree from Department of Major of Computer Engineering, Graduate School, Pukyong National University at Daeyeon, Busan, Republic of Korea in Feb. 2016. He has been serving as chairs in some conferences and workshops; MUE 2017, BIC 2017, CUTE 2017, WITC 2018, MUE 2018, PDCAT 2018, BIC 2018, CUTE 2018, WITC 2019, MUE 2019, MIMA 2019, MITA 2019, MIMI 2019, CSA 2019, JIPS Workshop.

Technical Committee at IFAC (International Federation of Automatic Control), CC 1 (Systems and Signals), TC 1.5. (Networked Systems) (2017-2020). And, Technical Committee at IFAC, CC 3 (Computers, Cognition and Communication), TC 3.2 (Computational Intelligence in Control) (2017-2020). Technical Committee at IFAC, CC 7 (Transportation and Vehicle Systems), TC 7.2. (Marine Systems) (2017-2020). Currently he is Associate Editor at Human-centric Computing and Information Sciences (HCIS), Springer Berlin Heidelberg (SCIE/SCOPUS indexed). Also, he is Associate Editor at Journal of Information Processing Systems (JIPS), Korea Information Processing Society (SCOPUS/ESCI indexed).

Research Professor of Dankook University at Jukjeon, Yongin, Republic of Korea (July. 2016- Sep. 2016). He was an Assistant Professor with the Department of Software, Catholic University of Pusan, Republic of Korea, from December 2016 to August 2019. Since September 2019, he has been an Assistant Professor (Tenure Track) with the Department of Data Informatics, (National) Korea Maritime and Ocean University, Republic of Korea.



# PROGRAM SCHEDULE FOR 2020 JIPS/KIPS-CSWRG WORKSHOP

Day 2, February 6, 2020		
Time	Min	HALL A
15: 00-17: 00	120	Organizing Committee Meeting
17: 00-19: 00	120	Local Arrangement Committee Meeting & Industry-Academia Cooperation Workshop

Day 2, February 7, 2020		
Time	Min	HALL A
08: 40-09: 30	50	Registration
09: 00-11: 10	130	Session A-1 (HALL A: 3F Chapel Hall) (Chair: Jun-Ho Huh)
11: 10-11: 20	10	Coffee Break
11: 20-13: 00	100	(HALL A: 3F Chapel Hall) (Chair: Yeong-Seok Seo)
13: 00-14: 30	90	Banquet
14: 30-15: 00	30	Break
15: 00-17: 00	120	Organizing Committee Meeting
17: 00-19: 00	120	Local Arrangement Committee Meeting & Industry-Academia Cooperation Workshop

1. A paper presentation should be made by one of authors of the paper for 20 minute (15 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.



## 2020 JIPS/KIPS-CSWRG WORKSHOP

**Day 2, February 7, 2020**

**08: 40-09: 30 Registration**

**09: 00-11: 10 Session A-1 :  
(HALL A: 3F Chapel Hall)**

**(Chair: Jun-Ho Huh)**

- 1. The Study on Network Errors Using Artificial Intelligence on IP-USN: Applies to Cloud Computing Environments**  
*Seong-Kyu Kim, Joongwoo Choi*
- 2. QR Code based Production Manufacturing Execution System (MES) Development**  
*Sang Jo Lee, Kyungryong Seo*
- 3. Study on Network Errors Using Artificial Intelligence on IP-USN: Applies to Cloud Computing Environments**  
*Seong-Kyu Kim, Joongwoo Choi*
- 4. A study on Automatic Labeling in the Object Detection for AutoML**  
*Hyungi Hong, Mokdong Chung*
- 5. Development of Product Management System Using Reefer Container Bar Code Recognition**  
*Sang-Hyang Lee, Jun-Ho Huh*
- 6. Tutorial (SI: Smart Grid and Ocean: Assistant Professor Jun-Ho Huh)**

**11: 20-13: 00 Session A-2 :  
(HALL A: 3F Chapel Hall)**

**(Chair: Yeong-Seok Seo)**

- 7. Distributed Deep Learning in Low Computing Power Environment**  
*Dong-Gun Lee, Seong-Guk Nam, Yeong-Seok Seo*
- 8. Development of Fishing Condition and Fish Shoal Location Forecasting System for Fisheries Professionals/Professional Fishermen Using Big Data Analysis and Recommendation System**  
*Sang-Hyang Lee, Jun-Ho Huh*
- 9. Graph Centrality-based Keyword Extraction for Document Classification**  
*Joon-Min Gil*





**10. A Study of Altered K-means Method using Initial Value Selection on Location Division**

*Se-Hoon Jung, Kyeong Jong Kim, Kyeong Ho Jo, Chun-Bo Sim*

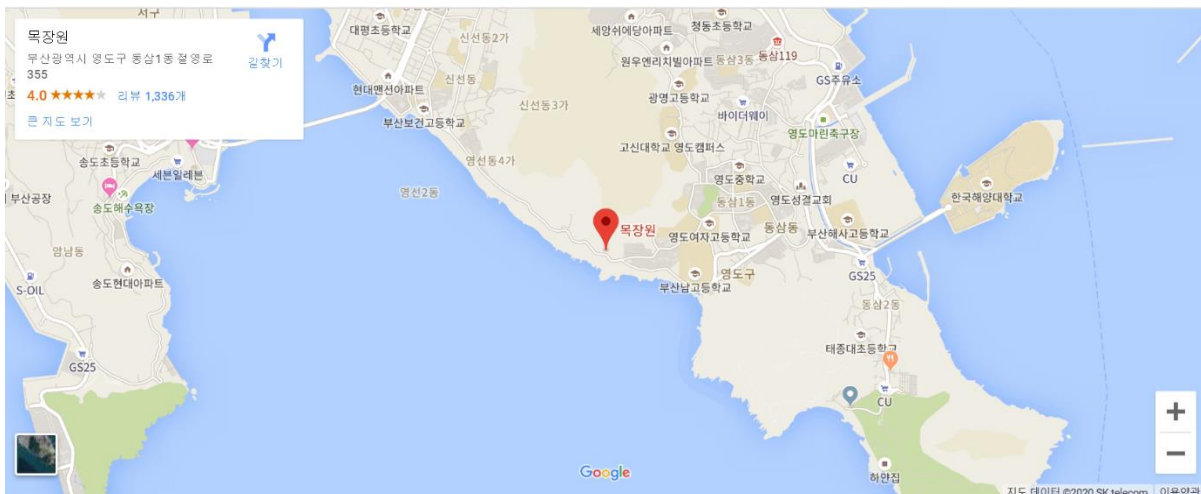
**11. An Improving Method of Surrogate Model in the Bayesian Optimization for the Applying AutoML**

*Yonghoon Kim, Mokdong Chung*

**12. Keynote: (JIPS 2020 Future Plans for Advanced IT Computing: Professor James J. (Jong Hyuk) Park**

## Workshop Venue

- Mok Jang Won Chapel Hall (목장원 채플홀): 3F
- Address: Jeoryeong-ro, Yeongdo-gu, Busan, Korea
- Tel: (+82)404-5000
- Website : <http://mokjangwon.co.kr/>



## Workshop Banquet Venue

- Place: Mok Jang Won (목장원 오채담): 3F
- Address: Jeoryeong-ro, Yeongdo-gu, Busan, Korea

