

**The International Conference on  
Future Information Technology,  
applications and services  
(IFIT 2019 Seoul)**

October 18-19, 2019  
Seoul, Korea

**Organized by**

**IFIT & KIPS CSWRG**



**2019 International Conferences**  
(Sponsored / Technically Sponsored by KIPS / KIPS CSWRG)

**Dec. 18 - 20, Macao, China**

- The 14th KIPS International Conference on Ubiquitous Information Technologies and Applications (CUTE 2019)
- The 11th International Conference on Computer Science and its Applications (CSA 2019)

## Message from the IFIT 2019 General Chairs

IFIT 2019 is the third event of the series of international scientific conference. This conference takes place on October 18-19, 2019 in Seoul, Korea. The aim of the IFIT 2019 is to provide an international forum for scientific research in the technologies and application of information technology.

The conference papers included in the proceedings cover the following topics: Internet of Things and Sensors, Embedded system and Middle ware, Security and Trust Computing, Multimedia Computing, Networking and Communications, Big data and Data mining, Cloud Computing, Web and Internet Computing, Grid and Cloud computing, Green IT and Sustainable Computing, Computational Intelligent Computing, Human-centric Computing. Accepted and presented papers highlight new trends and challenges of future information technologies. We hope readers will find these results useful and inspiring for their future research.

We would like to express our sincere thanks to Program Chairs: Jin Wang (Changsha University of Science & Technology, China), Neil Yen (University of Aizu, Japan), Yunsick Sung (Dongguk University, Korea), all Program Committee members, and all reviewers for their valuable efforts in the review process that 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.

IFIT 2019 General Chairs

Jong Hyuk Park, Seoul National University of Science and Technology, Korea  
Yi Pan, Georgia State University, USA  
Young-Sik Jeong, Dongguk University, Korea

## Message from the IFIT 2019 Program Chairs

Welcome to the 2019 International Conference on Future Information Technology, applications and services (IFIT 2019), which will be held in Seoul, Korea on October 18-19, 2019. IFIT 2019 will be the most comprehensive conference focused on the various aspects of information technologies. It will provide an opportunity for academic and industry professionals to discuss recent progress in the area of future information technologies. In addition, the conference will publish high quality papers which are closely related to the various theories and practical applications in multimedia and ubiquitous engineering. Furthermore, we expect that the conference and its publications will be a trigger for further related research and technology improvements in these important subjects.

For IFIT 2019, we received many paper submissions, after a rigorous peer review process, we accepted only articles with high quality for the IFIT 2019 proceedings. All submitted papers have undergone blind reviews by at least two reviewers from the technical program committee, which consists of leading researchers around the globe. Without their hard work, achieving such a high-quality proceeding would not have been possible. We take this opportunity to thank them for their great support and cooperation. Finally, we would like to thank all of you for your participation in our conference, and also thank all the authors, reviewers, and organizing committee members. Thank you and enjoy the conference!

IFIT 2019 Program Chairs

Jin Wang, Changsha University of Science & Technology, China  
Neil Yen, University of Aizu, Japan  
Yunsick Sung, Dongguk University, Korea

## Organization

### General Chairs

Jong Hyuk Park, SeoulTech, Korea  
Yi Pan, Georgia State University, USA  
Young-Sik Jeong, Dongguk University, Korea

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## Invited Speaker



### Smart Recommendation Systems

**Fei Hao, Ph.D.**

Associate Professor  
Shaanxi Normal University  
China

#### Abstract

The amount of movie has increased to become more congested; therefore, to find a movie what users are looking for through the existing technologies are very hard. For this reason, the users want a system that can suggest the movie requirement to them and the best technology about these is the recommendation system. However, the most recommendation system is using collaborative filtering methods to predict the needs of the user due to this method gives the most accurate prediction. Today, many researchers are paid attention to develop several methods to improve accuracy rather than using collaborative filtering methods. To further improve accuracy in the recommendation system, the k-clique methodology can be used to analyze social networks to be the guidance of this system. An efficient movie recommendation algorithm based on improved k-clique methods are introduced which are the best accuracy of the recommendation system.

#### 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 IFIT 2019

Day 1, Oct. 18, 2019		
Time	Min	HALLA
10:00-12:00	120	<b>Organizing Committee Meeting (Only for Invited Members)</b>
12:00-13:10	70	<b>Break</b>
13:10-13:30	20	<b>Registration</b>
13:30-15:00	90	<b>Session A-1</b> Chair : Byoungwook Kim
15:00-15:10	10	<b>Coffee Break</b>
15:10-16:40	90	<b>Session A-2</b> Chair : Kwang-il Hwang
16:40-16:50	10	<b>Coffee Break</b>
16:50-17:50	60	<b>Keynote : Smart Recommendation Systems</b> <b>Fei Hao, Ph.D.</b> Chair : Jungho Kang
17:50-18:00	80	<b>Break</b>
18:00-19:30	90	<b>Banquet</b> Chair : Yunsick Sung

Day 2, Oct. 19, 2019		
Time	Min	HALLA
10:00-12:00	120	<b>Local Arrangement Committee Meeting (Only for Invited Members)</b>
13:00-15:00	120	<b>Executive Meeting - Organized by IFIT 2019 (Only for Invited Members)</b>

1. Each paper should be presented by one of authors for 15 minutes (10 minutes for the presentation itself and 5 minutes for Q/A).
2. All speakers of each paper should meet the corresponding 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 IFIT 2019

Day 1, Oct. 18, 2019 (Friday)

10:00-12:00 Organizing Committee Meeting

12:00-13:10 Break

13:10-13:30 Registration

13:30-15:00 Session A-1 : IFIT 2019

(HALL A)

(Chair: Byoungwook Kim)

1. **Real-time Back-End Video Analysis Service Framework for Multi-channel Stream**  
*Kwang-il Hwang, and Junghoon Lee*
2. **A Blockchain-Based Smart City Network Architecture**  
*Jeong Hoon Jo, Jong Hyuk Park*
3. **Article-based Agent Control in Smart City Simulations**  
*Euhee Kim, Sejun Jang, Shuyu Li, Yunsick Sung*
4. **Privacy-aware trajectory data management method for crowdsourcing system using compressive sensing**  
*Yan Li, Byeong-Seok Shin*
5. **Fitness Management System Design for Children based on Bone Age**  
*Myeong-Hyeon Heo, Dongho Kim*
6. **Article Analysis-based Drawing Approach**  
*Hyewon Yoon, Yunsick Sung*

15:00-15:10 Coffee Break

15:10-16:40 Session A-2 : IFIT 2019

(HALL A)

(Chair: Kwang-il Hwang)

1. **Movie Recommendation System based on the Formal Concept Analysis Network Graph**  
*Phonexay Vilakone, Doo-Soon Park*
2. **A Keyword Extraction Method from Documents using Graph-based Centrality Measures**  
*Dipto Biswas, Hansung Lee, Joon-Min Gil*



3. **An Improved DBSCAN method considering Non-Spatial Similarity by using Min-Hash**  
*Jin Uk Yoon, Byoungwook Kim*
4. **Hybrid Decentralized PBFT Blockchain Framework for OpenStack**  
*Youngjong Kim, Jinho Park*
5. **Hybrid Malware Classification Method by Deep Learning**  
*Sejun Jang, Yunsick Sung*
6. **A Blockchain-based Neural Network and Decision Tree for Image Forgery Detection in Smart City**  
*Shailendra Rathore, Younghun Lee, Jong Hyuk Park*
7. **Lidar Sensor-based 3D Human Recognition Method**  
*Jeonghoon Kwak, Yunsick Sung*

**16:40-16:50**    **Coffee Break**

**16:50-17:50**    **Keynote**  
**(HALL A)**  
**(Chair: Jungho Kang)**

“Smart Recommendation System”

**Prof. Fei Hao, Ph.D.**  
Shaanxi Normal University, China

**17:50-18:00**    **Break**

**18:00-19:30**    **Banquet**  
**(The King’s, Grand Ambassador Seoul associated with Pullman)**  
**(Chair: Yunsick Sung)**

## **Day 2, Oct. 19, 2019 (Saturday)**

**10:00-12:00**    **Local Arrangement Committee Meeting**

**13:00-15:00**    **Executive Meeting - Organized by IFIT 2019**

# CONFERENCE VENUE

## Dongguk University



### Address

- #4161, 4F, New Engineering Building – 신공학관 4161 호, Dongguk University  
26, Pil-dong, 3-ga, Jung-gu, Seoul 04620, Korea

### URL

- <http://www.dongguk.edu/mbs/en/index.jsp>

### MAP

- New Engineering Build is located at 32 in the below map.

