

The 2018 Global Conference on Information Technology, Computing, and Applications (GlobalIT 2018)

January 15 - 17, 2018

Manila, Philippines

Organized by

KIPS-CSWRG



2018 International Conferences

The 2018 World Congress on Information Technology Applications and Services (WITC 2018)

- February, 20-22, 2018, Jeju, Korea
- <http://www.worlditcongress.org/2018>

The 12th International Conference on Multimedia and Ubiquitous Engineering (MUE 2018)

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

The 13th International Conference on Future Information Technology (FutureTech 2018)

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

The 10th International Conference on Computer Science and its Applications (CSA 2018)

- December, 17-19, 2018, Okinawa, Japan
- <http://csa-conference.org/2018>

The 13th KIPS International Conference on Ubiquitous Information Technologies and Applications (CUTE 2018)

- December, 17-19, 2018, Okinawa, Japan
- <http://cute-conference.org/2018>

Message from the GlobalIT 2018 General Chairs

The 2018 Global Conference on Information Technology, Computing, and Applications (GlobalIT 2018) will be held in Manila, Philippines, January 15~17, 2018. GlobalIT 2018 will be the most comprehensive conference focused on Information Technology, computing, and applications. GlobalIT 2018 will provide an opportunity for academic and industry professionals to discuss the latest issues and progress in the area of advanced IT such as Ubiquitous computing, Wireless sensor network/RFID, Pervasive platform and middleware, Mobile multicasting, Wireless communication technology, Security and trust Computing, Future internet, Internet of Things, Cloud computing, Big data, Intelligence and Neuro computing, etc.

In addition, the conference will publish high quality papers which are closely related to the various theories and practical applications in advanced IT. 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 papers included in the proceedings cover the following topics: Mobile and ubiquitous computing, 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.

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 Honorary Chair, Doo-Soon Park (Soon Chun Hyang University, Korea). Our special thanks go to the Program Chairs: Jung-ho Kang (Soongsil University, Korea), Neil Y. Yen (University of Aizu, Japan), and Jason C. Hung (Oversea Chinese University, Taiwan), 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.

Global IT 2018 General Chairs

Young-Sik Jeong, Dongguk University, Korea
Hamid R. Arabnia, University of Georgia, USA

Message from the Global IT 2018 Program Chairs

Welcome to the 2018 Global Conference on Information Technology, Computing, and Applications (GlobalIT 2018) which will be held in Manila, Philippines, January 15~17, 2018. GlobalIT 2018 will be the most comprehensive conference focused on the various aspects of advances in Information Technology, computing, and applications.

GlobalIT 2018 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. GlobalIT 2018 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 (Soon Chun Hyang University, Korea), the Honorary Chair of GlobalIT 2018 for his strong encouragement and guidance to organize the conference. We would like to thank GlobalIT 2018 General Chairs, Young-Sik Jeong (Dongguk University, Korea), and Hamid R. Arabnia (University of Georgia, USA) for their advices to make possible organization of GlobalIT 2018. We would like to express special thanks to execute members for their timely unlimited support.

GlobalIT 2018 Program Chairs

Jungho Kang, Soongsil University, Korea

Neil Y. Yen, University of Aizu, Japan

Jason C. Hung, Oversea Chinese University, Taiwan

Organization

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Doo-Soon Park, Soon Chun Hyang University, Korea

General Chairs

Young-Sik Jeong, Dongguk University, Korea
Hamid R. Arabnia, University of Georgia, USA

Program Chairs

Jungho Kang, Soongsil University, Korea
Neil Y. Yen, University of Aizu, Japan
Jason C. Hung, Oversea Chinese University, Taiwan

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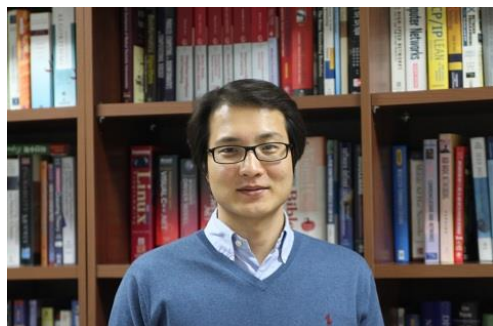
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Invited Speaker



Recent Systems, Standards, and Protocols for the Internet of Things

Kwang-il Hwang, Ph.D.

Professor

Dept. of Embedded Systems Engineering

College of Information Technology

Incheon National University, Korea

Abstract

The Internet of Things covers a huge range of industries and use cases that scale from a single constrained device up to massive cross-platform deployments of embedded technologies and cloud systems connecting in real-time. Tying it all together are numerous legacy and emerging communication protocols that allow devices and servers to talk to each other in new, more interconnected ways. At the same time, dozens of alliances and coalitions are forming in hopes of unifying the fractured and organic IoT landscape. Therefore, in this talk, recent IoT standards and protocols will be discussed: the topic will include the list of popular protocols and standards for IoT devices, apps and cloud platforms.

Biography

Dr. Hwang is an associate professor, in the department of embedded systems engineering, Incheon National University, Korea. He has received MS. and Ph.D. in Electronics and Computer Engineering from Korea University, Seoul, Korea, 2004 and 2007, respectively. He worked as an assistant professor at the dept. of Computer Control Engineering, Incheon City University, Incheon, Korea, 2007 – 2010. Since 2010, he has been with the department of Embedded Systems Engineering, College of Information Technology, Incheon National University, Korea, where he is currently an associate professor. He has worked as an advisory director of K-one information telecommunication co. ltd., 2006 ~ 2009, he was a vice chair of World Embedded Software Contest 2013, and he was a committee member of ICT standard Map, TTA. Based on embedded networked system design expert skills, his research is focused on fault-tolerable system, energy-efficient system, and network-oriented IoT application design. For the last 10 years, he performed more than 30 research projects granted by government and collaborated with several companies. He also has a number of published papers and patents: more than 100 published papers and more than 30 patents. In addition, he received Best paper awards from several domestic and international conferences, outstanding INU researcher awards, 2011 and 2014, and he also gained the honor, World 100 educators, in CE engineering, 2009, IBC. Since 2014, he has joined JIPS (Journal of Information Processing and Systems) editorial board, where he is currently an associate editor, and he has acted as an organizing member in a number of international conferences hosted by KIPS CSWRG. He is also a member of IEEE, KICS, KMMS, KIPS, and KISS.

PROGRAM SCHEDULE FOR GLOBAL IT 2018

Day 1, January 15, 2018		
Time	Min	HALL -A
10:00-12:00	120	Local Arrangement Committee Meeting
13:00-13:20	20	Registration
13:20-13:50	30	Keynote: Recent Systems, Standards, and Protocols for the Internet of Things Kwang-il Hwang, Ph.D. Professor Incheon National University, Korea Chair: Gangman Yi
13:50-14:00	10	Coffee Break
14:00-15:10	70	Session 1 Chair: Yunsick Sung
15:10-15:20	10	Coffee Break
15:20-16:30	70	Session 2 Chair: Kyungsoo Lim
18:00 -		Banquet (Hall A)

Day 2, January 16, 2018		
Time	Min	HALL -A
10:00-12:00	120	Organizing Committee Meeting I
13:00-15:00	120	Executive Meeting I - Organized by Global IT
16:00-17:00	60	Session 3 Chair: Seokhong Min

[ONLY FOR INVITED MEMBERS]

Day 3, January 17, 2018		
Time	Min	HALL -A
10:00-12:00	120	Organizing Committee Meeting II
13:00-15:00	120	Executive Meeting II - Organized by Global IT 2018
16:00-17:00	60	Session 4 Chair: Byoungwook Kim

[ONLY FOR INVITED MEMBERS]

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

**DETAILED SCHEDULE FOR
THE 2018 GLOBAL CONFERENCE ON
INFORMATION TECHNOLOGY, COMPUTING,
AND APPLICATIONS (GLOBAL IT 2018)**

Day 1, January 15, 2018 (Monday)

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

13:00-13:20 **Registration**

13:20-13:50 **Keynote**
(HALL A)
(Chair: Gangman Yi)

Recent Systems, Standards, and Protocols for the Internet of Things

Kwang-il Hwang, Ph.D.
Professor, Incheon National University, Korea

13:50-14:00 **Coffee break**

14:00-15:10 **Session 1**
(HALL A)
(Chair: Yunsick Sung)

- 1. Energy-efficient DVFS Algorithms for Mobile GPGPU Applications**
SeongKi Kim, Seok-Kyoo Kim
- 2. Pre-Trained Deep Convolutional Neural Network for Classification of Rice Plants by Health Status**
Ronnel Atole, Daechul Park, Leo Constantine Bello, John Rey Lirag
- 3. Detection of Mild Cognitive Impairment during Gait by IMU Sensor System**
Jeongwoo Seo, Jinseung Choi, Jinsu Lee, Junggil Kim, Gyeræ Tack
- 4. Blockchain-based Solution for a Collaborative DDoS Mitigation using Smart Contract and Deep Learning**
Essaid Meryam, Su-Myung Gang, Hyeonwoo Kim, Eunggi Lee, Wooguil Pak, Hongtaek Ju
- 5. Implementation of Blockchain-based Website Falsification Monitoring System**
Yonghwan Jung, Jangwon Choi, Hyeongju Lee, Joonmin Gil, Haenggon Lee

15:10-15:20 **Coffee break**

15:20-16:30 Session 2

(HALL A)

(Chair: Kyungsoo Lim)

- 1. Multi-Motion Estimation Method based on Consecutive Motion Sequences using Bayesian Probability in NUI/NUX**
Haitao Guo, Yunsick Sung
- 2. Variable Precision Rough k-cliques Model**
Fei Hao, Doo-Soon Park, Lantian Guo
- 3. Sensor Data Compression Algorithm for Low-Power Wireless Communications**
Kwang-il Hwang
- 4. Parallel Test-Sheet Generation based on Genetic Algorithm for Considering Item Exposure**
ByoungWook Kim, YoungWook Yang
- 5. IoT Service Classification Method by Operation Step**
Daewon Lee

18:00 - Banquet [HALL-B]

Day 2, January 16, 2018 (Tuesday)

10:00-12:00 Organizing Committee Meeting I

13:00-15:00 Executive Meeting I - Organized by Global IT 2018

16:00-17:50 Session 3

(HALL A)

(Chair: Seokhong Min)

- 1. Influencing Factor Analysis of University Learners' Intention to Use YouTube for Learning**
YunJae Jang, Byoungwook Kim
- 2. A Device Vulnerability Information Management System based on Internet-Wide scanning**
Taeun Kim, Hwankuk Kim, Jungho Kang, Moon-Seog Jun
- 3. Design and Implementation of Proxy Mobile IP for Vehicular Environment**
Daewon Lee
- 4. Task Scheduler for Energy Consumption of IoT Based on Mobile Edge Computing**
GiSung Yu
- 5. Third Party Application Analysis for Enhanced Mobile Security**
Jung Hyun Ryu, ByungWook Kwon, Jong Hyuk Park

Day 3, January 17, 2018 (Wednesday)

10:00-12:00 **Organizing Committee Meeting II**

13:00-15:00 **Executive Meeting II - Organized by Global IT 2018**

16:00-17:00 **Session 4**

(HALL A)

(Chair: Byoungwook Kim)

- 1. Bayesian theorem for data generation based on item response theory**
IlKyu Yoon, Byoungwook Kim
- 2. Efficient Book Recommendation System based on Keyword Matching and MapReduce Methods**
Yun-Soo Lee, They Pheaktra, Joon-Min Gil
- 3. Allocated Task Management for HTC based on Integrated Mobile Resources**
Seok-Hyeon Han
- 4. Enhanced Authentication Mechanism for Personal Resource Information Security on Mobile Cloud Computing with Blockchain**
He Mu

Conference Venue



Ag New World Manila Bay Hotel

1588 Pedro Gil cor. M.H. Del Pilar, Manila, Philippines, 1004

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Website: <https://manilabay.newworldhotels.com/en/>

Every one of us at AG New World Manila Bay Hotel wants to make your stay with us a delight, whether you're here on business or leisure ... or even to get married.

Good food and good shopping are always a pleasure, so you'll love our three award-winning restaurants, plus the Pastry Boutique, The Lounge and the Pool Bar.

We make work a little easier with complimentary Internet service in your room and throughout the hotel, flexible venues for meetings and conferences of all sizes, and a business center that can handle all your needs, from office supplies and photocopying to secretarial and translation support.

We make conference more enjoyable with a fitness center that has the latest equipment, including cardiovascular and whole-body machines, a 25-meter outdoor lap pool, children's pool and relaxing whirlpool, and rejuvenating spa and massage services.

The central location of our luxury, 5-star hotel makes it easy to explore the many sights and activities of Malate, including the Walled City of Intramuros, Luneta Park, Chinatown, Rizal Park and the Cultural Center of the Philippines. You can shop at the Mall of Asia and test your skill at the nearby Casino Filipino/Manila.

Conference are wonderful in the Philippines, especially at AG New World Manila Bay Hotel,- we would love to help you plan yours.