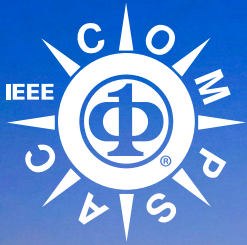


COMPSAC 2018



July 23-27

National Institute of Informatics, Tokyo, Japan

Staying Smarter in a Smartening World

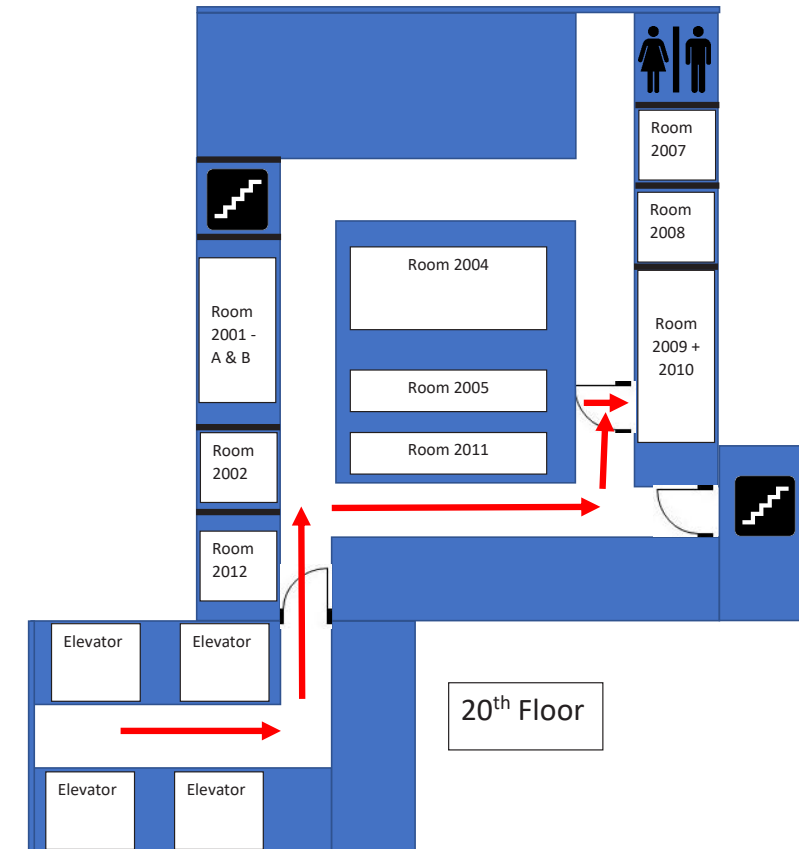
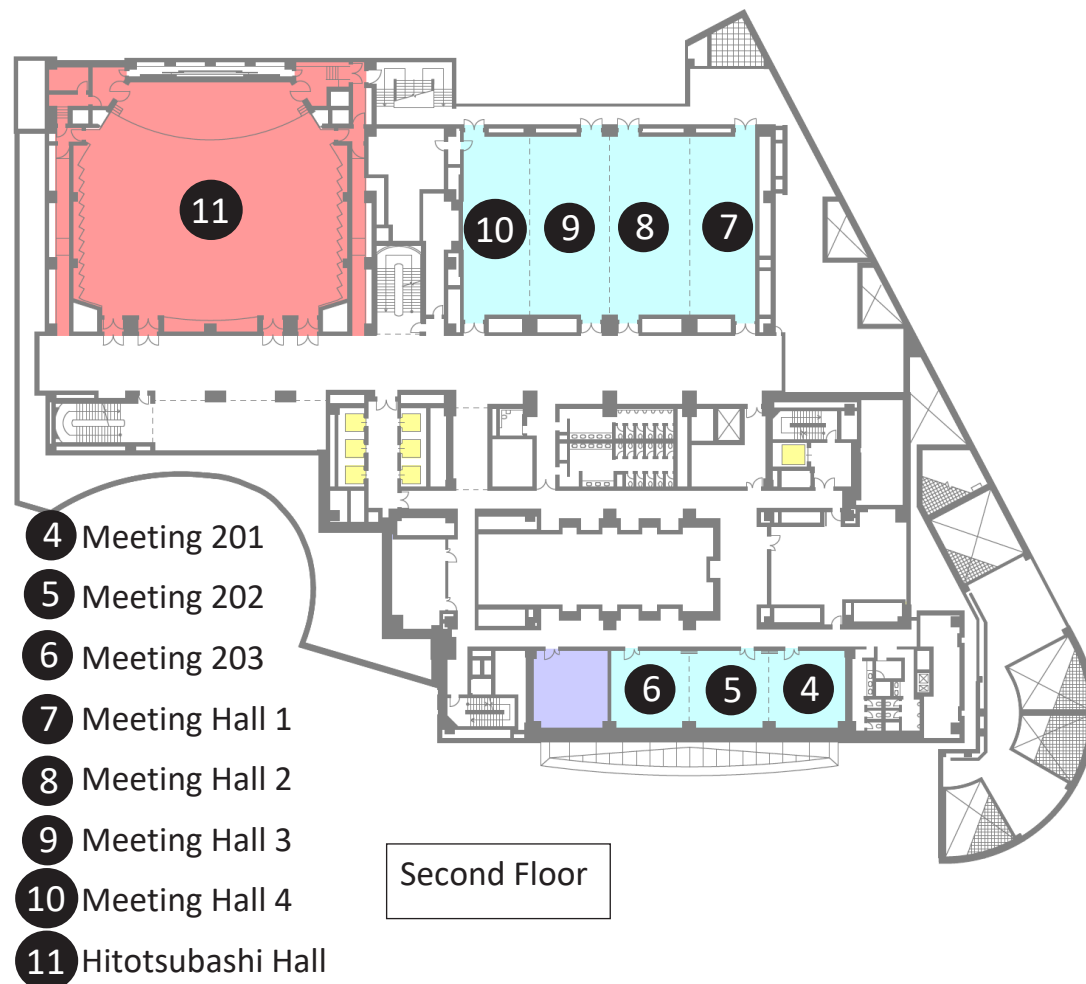
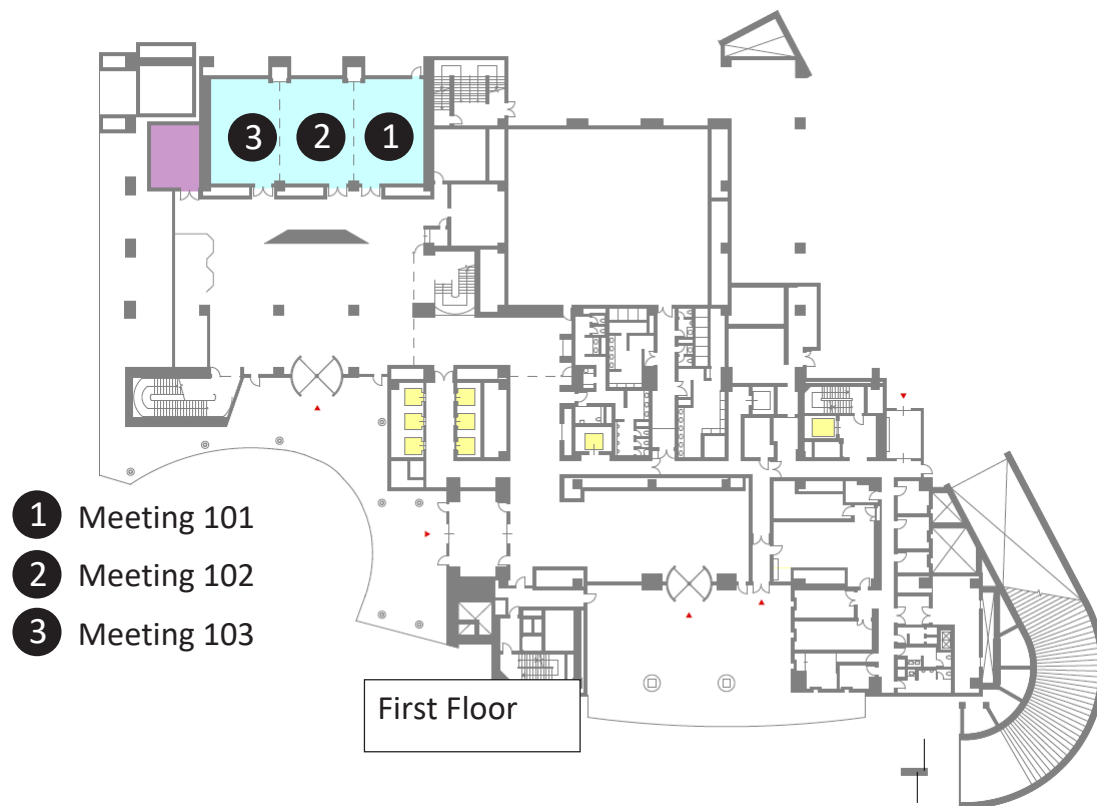
Conference Program



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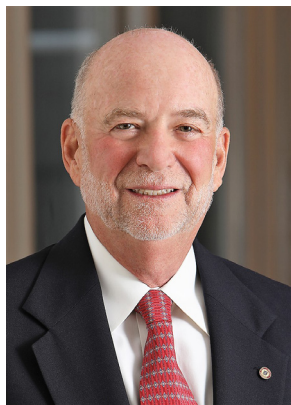
COMPSAC 2018 Mobile App

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Web Versions:
<https://event.crowdcompass.com/compsac18>
 password: compsa18

Please fill out the conference survey on the COMPSAC Conference App and let us know about your experience at COMPSAC 2018!



**Message from Sorel Reisman
COMPSAC Standing Committee Chair**

On behalf of myself and the volunteer organizers of COMPSAC I'd like to welcome you all to Tokyo and to COMPSAC 2018. As many of you know, COMPSAC, the signature conference of the IEEE Computer Society, annually moves from Asia, to North America, to Europe, and back. We are delighted this year to be in Japan, and are thankful to Waseda University and the National Institute of Informatics (NII) for hosting this year's conference. We are fortunate to have Masaru Kitsuregawa, Director General, of NII welcoming us as one of our three keynote speakers.

I'm sure, when this year's Local Chairs, Hironori Washizaki (Waseda University) and Nobukazu Yoshioka (NII) volunteered to host the conference, they didn't dream of the all the responsibilities and work for which they were signing up. We appreciate all they have done to help bring COMPSAC to Tokyo. Another person deserving of our appreciation is my friend Hironori Kasahara from Waseda University, also the 2018 Computer Society president who has been incredibly helpful providing countless resources for this year's conference. These folks, and our colleagues from the Information Processing Society of Japan, under the leadership of Professor Shojiro Nishio, IPSJ President, have been instrumental in helping to organize this year's conference. In fact, one of COMPSAC's four hardworking Program Chairs-in-Chief, Yasuo Okabe (Kyoto University) was recently elected a vice president of IPSJ.

Although "COMPSAC" originally was an acronym standing for Computer Software and Applications Conference, a few years back we changed the name to Computers, Software and Application Conference, thereby allowing us to broaden the scope to include more than just software and applications, notably, to also focus on hardware. In the last couple of years, issues related to Moore's Law and beyond, have become an additional sub theme of the conference.

This year's main theme, Staying Smarter in a Smartening World and our focus on new technologies and applications and their enabling hardware and software technologies reflect COMPSAC's name change. The addition and increase in the number of papers and special sessions on AI and Machine Learning provide attendees with unique windows on the future of all aspects of computing – a perspective that COMPSAC uniquely provides to conference attendees. These windows will once again be viewable through our plenary panels, A Smarter Future led by Kathy Grise of IEEE's Future Directions Senior Technology Manager, and COMPSAC's founder, Stephen Yau's annual Future of Computing session.

In an effort to provide 'out-of-the-box' support to our presenters, this year we are continuing the J1C2 and C1J2 journal/conference publication/presentation opportunities that we started last year. We can thank Atilla Elci and Valdimir Getov for continuing to promote these programs. We expect even greater emphasis on J1C2 and C1J2 as we plan 2019. Also this year we have introduced the IEEE Open Preview program. All the papers in our program will have been available for public viewing one full month before the conference, thereby making our author/presenters' work available to a much wider audience of researchers earlier than usual.

Starting this year, our annual banquet will take on a new focus in which we will be honoring the hard work and successes of many of our member and volunteer colleagues. This year we have renamed our annual banquet to be the COMPSAC Annual Awards Banquet, and we are privileged to have

been asked by the Computer Society to present their 2018 IEEE Computer Society Technical Achievement Award to Margaret Martonosi, and the 2018 IEEE Computer Society Pioneer Award to Bjarne Stroustrup – both of whom will also serve as our other two keynote speakers. We hope that the CS will continue to ask us to include such honorees in the future.

Also this year, we will be continuing some 'trends' we started last year when we introduced our annual Young Professionals program, this year featuring a 5 different Computer Society presidents who will talk about the personal and career benefits of being a CS member and volunteer.

COMPSAC has always been a venue for CS presidents, and this year we continue that tradition with no fewer than seven CS presidents in attendance (Chang, Fujii, Kasahara, Metra, Milojicic, Yau, and yours truly). The other trend we are continuing, under the leadership of Prof. Paolo Montuschi, is the induction of the new Waseda University Eta Kappa Nu IEEE honor society chapter.

The COMPSAC volunteer community is unique in the Computer Society. As a longstanding volunteer myself, I have been singularly impressed by the size and commitment of this community. In 2018, the active COMPSAC volunteers who made the conference possible, in addition to those I specifically mention here, we need to give special thanks to our two General Chairs, four Program Chairs-in-Chief, four Workshop Chairs, two Proceeding Chairs, Publicity Chair, Social Media Chair, ten Symposia Chairs, all our Workshop Chairs. These folks' names are all listed on the website under the link labeled, COMPSAC Organizers.

Finally, in addition to all our sponsors listed on our website sponsor page, there are some individuals whose overall support of this year's conference warrants special thanks: San Murugesan, EIC Emeritus of IEEE ITProfessional Magazine, who continues to provide creative programs and ideas to assist me in continuing to evolve COMPSAC; Simanta Mitra, our Treasurer who spends countless hours managing our finances and answering my pesky questions at all hours of the day or night; Kathy Grise, a true COMPSAC friend, mentioned above; Dejan Milojicic, CS President Emeritus, volunteer keynote speaker, and my personal advisor, whether I want advice or not; Laurel Ming who, among many other things completely redesigned and rebuilt our new and infinitely improved website; Michelle Ocampo our dedicated Computer Society staff liaison who is always available to help me navigate through any irrational IEEE policy obstacle – of which there are many; and finally, my best buddy and Standing Committee Vice Chair, Sheikh Iqbal Ahamed – or just plain Iqbal to his many friends, without whom we probably couldn't really pull off this conference.



**Message from Sheikh Iqbal Ahamed
Standing Committee Vice-Chair**

On behalf of the COMPSAC 2018 organizing team, we would like to welcome you to the 42nd Annual IEEE International Conference on Computers, Software, and Applications (COMPSAC 2018), in Tokyo, Japan, July 23-27, 2018. COMPSAC was first held in 1977 in Chicago. In the years since its founding, it has become one of the major international forums for academia, industry, and government to discuss research results, advancements and future trends in computer and software technologies and applications. The technical program includes keynote addresses, research papers, panel discussions, fast abstracts, student research symposiums, and workshops on emerging important topics. It now alternates

its meeting among sites in Asia, Europe, and North America. Over the years, its meetings have advanced the major topics in computing and software development.

The theme of COMPSAC 2018 is “Staying Smarter in a Smartening World.” Emerging developments in areas such as Deep Learning, supported by increasingly powerful and increasingly miniaturized hardware, are beginning to be deployed in architectures, systems, and applications that are redefining the relationships between humans and technology. As this happens, humans are relinquishing their roles as masters of technology to partnerships wherein autonomous, computer-driven devices become our assistants. COMPSAC will address major challenges utilizing this smart computing and technology, which in a few short years has become spread rapidly around the globe and become a key part of the world’s infrastructure. COMPSAC 2018 provides a platform for in-depth discussion of such movements and challenges. It supports discussions of general methodology for smart computing and a consideration of emerging smart applications, Smart Health devices, networked healthcare, wearable computing, internet-of-things, cyber-physical systems, smart cities, and smart planet.

COMPSAC is a premier global forum for crosscutting computing research, practice and education. In its long history with the Computer Society, COMPSAC has established a strong reputation as a meeting with high quality technical content and wide-ranging discussion of technical issues. It is also known as a well-planned, well-organized, well-attended, and well-managed event.

The COMPSAC conference program is supported by several international societies including Information Processing Society of Japan (IPSJ), Korean Institute of Information Scientist and Engineers (KIISE), and China Computer Federation (CCF), and several special technical communities such as Big Data from the IEEE Computer Society Future Directions Committee, and the Big Data Initiative. As a result, the conference will host 9 symposiums and 20 workshops, including a major workshop on Big Data and Artificial intelligence. In addition, it will present four keynote speakers and four plenary panels that will provide an international perspective on the conference theme. Finally, it will also bring together funding agency and industry representatives from across the globe to address their vision for Smart Computing - Challenges and Applications.

COMPSAC received outstanding support the local team at the National Institute of Informatics (NII), Japan and generous support from our sponsoring patrons. We would like to thank them for their contributions to the conference.

Message from the General Chairs

Shinichi Honiden, NII, Japan

Roger U. Fujii, Fujii Systems, 2016 IEEE Computer Society President

On behalf of COMPSAC 2018 organization, we welcome you to the 42nd IEEE International Computers, Software, and Applications Conference (COMPSAC 2018), held in Tokyo, Japan, July 23–27, 2018. We hope you will also take the time to enjoy the diverse landscape, numerous sights, and the excellent tourist facilities Japan has to offer.

COMPSAC is the IEEE Computer Society Signature Conference on Computers, Software, and Applications. It is a major international forum for academia, industry, and government to discuss research results and advancements, emerging problems, and future trends in computer and software technologies and applications. The technical program includes keynote addresses, research papers, industrial case studies, plenary and specialized panels, fast abstracts, a student research symposium, poster sessions, and a number of workshops on emerging and important topics in computers, software and applications. COMPSAC conference series alternates its meeting among

sites in Asia, Europe, and North America. The theme of the 42nd COMPSAC is “Staying Smarter in a Smartening World.” It is unquestionable that a smartening world must be our future. Computer technologies are producing profound changes in society. Emerging developments in areas such as Deep Learning are beginning to be deployed in architectures, systems, and applications that are redefining the relationships between humans and technology. COMPSAC 2018 will provide a forum for in-depth presentations and discussions of the relationships, technical challenges, successes, and failures.

Sessions will include topics and issues related to autonomous computing, wearable computing, the internet-of-things, social networking, cross-domain data fusion, privacy, security and surveillance, cloud computing, big data, physiological computing, self-aware and self-expressive systems, adaptive learning and teaching, and emerging architectures and network issues that affect all these developing technology-driven innovations. The COMPSAC 2018 conference offers a very rich technical program, which features research sessions for 63 high quality papers, short paper sessions for 58 short papers, all selected from over 250 submissions. In addition, it features 20 workshops with 152 papers, 28 fast abstracts, 11 student research symposium papers, 4 keynotes, and 3 plenary panels.

We would like to thank the program chairs for their dedication and effort to compose such a high quality technical program, and thank the COMPSAC Standing Committee, especially Prof. Sorel Reisman and Prof. Iqbal Ahamed, for their hard work, their dedication, and their strong support.

We trust that you will enjoy the 2018 COMPSAC technical program, the social events, and the interactions with attendees from many different regions and countries world-wide.

Message from the Program Chairs

Jiannong Cao, Hong Kong Polytechnic University, Hong Kong

Stelvio Cimato, University of Milan, Italy

Yasuo Okabe, Kyoto University, Japan

Sahra Sedighsarvestani, Missouri University of Science & Technology, USA

Welcome to COMPSAC 2018, the 42nd IEEE Computer Society International Conference on Computers, Software & Applications, in the beautiful and historical city of Tokyo, Japan. “Staying Smarter in a Smartening World” is the theme this year. Computer technologies are driving profound changes in our society and from year to year, emerging developments in different areas are redefining the relationships between humans and technology. What are the technologies enabling these changes, and what will be the social, cultural, and economic challenges arising from these developments are just some of the questions that should be addresses in the future.

COMPSAC provides an international forum for academia, industry, and government to discuss research results and advancements both in traditional and in emerging fields, such as education and learning, computer architectures, software engineering, network and web technologies, human/social communications, mobile/wearable computing, the Internet-of-things, cyber-physical systems, security and trust, data analytics, and the smart planet. COMPSAC 2018 is organized as a tightly integrated union of symposia, each of which is focused on technical aspects related to the “smart” theme of the conference. The technical program includes keynote addresses, research papers, industrial case studies, fast abstracts, a doctoral symposium, poster sessions, and workshops and tutorials on emerging and important topics related to the conference theme. Plenary and specialized panels complement the main program, addressing the technical challenges and discussing with technologists who are developing and deploying these smart systems and

applications. Panels address also cultural and societal challenges for a society whose members must continue to learn to live, work, and play in the environments the technologies produce.

We reviewed over 250 submissions this year. Using a double-blind system, each paper was reviewed by at least three Program Committee members within each symposium. Symposia Chairs then made recommendations to the entire Program Committee for which papers to accept as regular papers, short papers, or fast abstracts. After discussion at the Program Committee meeting in Beijing on March 16–17, 2018, we accepted 63 regular papers (24%), and 58 short papers. Also, 84 papers that were not accepted for the main conference were referred to COMPSAC workshops, posters, and fast abstracts, where many were accepted. We extend our heartfelt gratitude to all the authors that submitted their works this year, and to more than 400 Program Committee Members who volunteered their time and effort to peer-review each paper. Many thanks as well as to the Symposia Chairs, Program Committee members who attended the meeting in Beijing, and those who organized that event. The COMPSAC 2018 Program would not be possible without contributions of several dedicated volunteers, many serving in organizing chair roles for components such as panels, doctoral symposium, fast abstracts, posters, proceedings, finance, registration, publications, publicity, organizing, and submission systems support. The workshop chairs, Kenichi Yoshida, Chung-Horng Lung, Hong Va Leong and Ji-jiang Yang have done an excellent job coordinating 20 workshops this year. We also recognize the General Chairs, Shinichi Honiden and Roger U. Fujii, for their support and encouragement. Sheikh Iqbal Ahamed has as usual given his strong contribution, working tirelessly, supporting our efforts and keeping all our activities on track and on schedule as Standing Committee Vice Chair. Sorel Reisman has given the invaluable guidance, advice, and support as COMPSAC Advisory Committee Chair.

Please enjoy your time at the conference – discuss important topics, interact with others, make new friends, and we hope you will join us again next year for COMPSAC 2019!

Message from the Workshop Chairs

Kenichi Yoshida, University of Tsukuba, Japan

Ji-Jiang Yang, Tsinghua University, China

Hong Va Leong, The Hong Kong Polytechnic University, Hong Kong

Chung Horng Lung, Carleton University, Canada

It is our pleasure to welcome all you to the workshops of the 42nd IEEE International Computer Software and Application Conference, COMPSAC 2018, which is held in Tokyo, Japan, among the largest metropolitan areas in the world, with advanced technology in smart robotics, organized under the exciting theme of Staying Smarter in a Smartening World.

This year the COMPSAC conference includes 20 workshops covering different aspects of developing computer software and applications. The workshops nicely complement the main conference and they together create an exciting scientific program for 5 days. According to the COMPSAC tradition, workshops are held during the first (July 23) and during the last (July 27) day of the conference.

COMPSAC workshops provide a nice place for exchange of ideas and results in different aspects of computer software and applications. The lion's share of contribution to the workshops comes from the linkage with the main research focus of COMPSAC, especially along the software engineering and development aspect. There are 5 related workshops, namely, Quality Oriented Reuse of Software, Security Aspects in Processes and Services Engineering, Software Test Automation, Security, Trust & Privacy for Software Applications, and Computer Forensics in

Software Engineering, contributing to about 30% of the sessions in the workshops. In response to the smart computing theme this year, i.e., Staying Smarter in a Smartening World, there are 3 workshops being proposed, namely, Advances in AI & Machine Learning, Smart Computing & Applications, and Smart IoT Sensors and Social Systems for eHealth and Well-Being Applications. These workshops have contributed to 20% of all workshop sessions. Needless to say, emerging technologies and networking form the third pillar in COMPSAC tradition with more than one third of the contributions. We are pleased to report that the workshops in COMPSAC 2018 are well-balanced as well as highly interesting. We believe that the topics covered by the workshops are closely related to those contained in the main conference and hope that participants can benefit by interacting between one another to stimulate new research ideas and approaches.

This year we received a very large number of papers submitted to the workshops. Only 154 of them were selected for presentation. There are two major paths for contributions to workshops. The standard contribution path follows a direct submission to the workshops in response to the worldwide Call for Papers. Each paper submission undergoes a rigorous review process by at least three independent reviewers and only around half of the submitted papers were accepted. Owing to the relatively low acceptance rate in the main conference, some papers receiving highly positive reviews, but unfortunately cannot be accepted due to acceptance rate limitation, were referred to workshops for consideration. These papers had already undergone a rigorous review process and workshop organizers would ensure that they fit into the theme of the workshops, before they can be formally accepted for presentation. We hereby thank all authors who submitted papers to the workshops for their support of the conference. Selection process was carefully carried out by the workshop organizers. We would like to thank the organizers of all workshops and the program committee members of workshops for their efforts and excellent job, despite working under a very short review cycle. We also would like to thank all people involved into organizing the COMPSAC 2018 and standing committees for their help, to make COMPSAC 2018 a success.

We hope that participants of COMPSAC 2018 will enjoy nice presentations and in-depth discussions, besides attending keynote speeches and joining the panel on the smart world.



COMPSAC 2018 is offering Open Preview, a new IEEE program designed to increase speed to market, allow for accelerated access to research, as well as increase in visibility of the conference publication.

Open Preview allows conference proceedings to be available in the IEEE Xplore digital library, free of charge to all customers, one month before the conference until the conference ends. Access to the conference proceedings will be available via the conference mobile app or directly on the Xplore digital library.

Main Conference: <https://ieeexplore.ieee.org/xpl/tocresult.jsp?isnumber=8377622>

Workshops: <https://ieeexplore.ieee.org/xpl/tocresult.jsp?isnumber=8377808>



Tokyo Convention & Visitors Bureau, with support from the Tokyo Metropolitan Government, will offer free tours of Tokyo sites to overseas participants at COMPSAC!

Tours will be available July 23 from 13:30 – 17:00 and July 27 from 9-12:30 and 13:30 – 17:00. Participants must sign up at the TCVB table near the registration desk. We request that you sign up for only 1 tour to make sure everyone has the opportunity to participate. Tours will be available on a first come / first serve basis.

Tour 1: TOKYO SKYTREE: The capital city's latest icon, and the world's tallest broadcasting tower is located in Sumida ward, where Edo culture thrives to this day. The elevator moving at a top speed of 600m per minute will take participants to the glass enclosed 360 degree observation deck at 350m above the ground. The main structure consists of a steel skeleton reinforced by steel frames to double the standard strength. Many of the famous features of the Tokyo cityscape, including Rainbow Bridge in the bay area, and, on a clear day, Mt. Fuji in the distance, can be enjoyed from the observation deck.

Tour 2: River Cruise and Hama-rikyu Gardens: Half-hour boat cruise down the Sumida River travels under some 14 bridges spanning Tokyo's main river, passing the capital's famous landmarks along the way. The cruise arrives at its destination, the majestic Hama-rikyu Gardens along the Tokyo Waterfront in Shiodome, where participants can walk around a beautifully preserved garden that the family of the ruling Tokugawa Shogun owned from the 17th to mid-19th centuries and used for hunting with falcons.

Tour 3: Meiji Jingu Shrine and Harajuku Shopping: The Meiji Jingu Shrine is a Shinto shrine, dedicated to Emperor Meiji and his wife Empress Shoken, was established in 1920. Over 100,000 trees were donated by people all over Japan at the time of the shrine's establishment, creating the expanse of forest and garden that can be seen today. On the first few days of every New Year, more than 3 million people visit Meiji Jingu, making it the most visited shrine in Japan. Meiji Jingu shrine is also the place where Japanese people honor life events, such as births, weddings, and New Year's celebrations.

Tour 4: Edo-Tokyo Museum and Asakusa: Edo-Tokyo Museum introduces the history and culture of Edo, the ancient name for Tokyo. It also fascinates visitors with stories of the city's captivating past. You can take a look at a traditional playhouse (theatre), and scenes from everyday life that will transport you back in time to the Edo period (1603-1868). This museum presents visitors with a unique opportunity to compare and contrast old Edo with modern Tokyo, so you can appreciate how Tokyo has transformed over the years.

Asakusa Temple is truly a historical haven in modern Tokyo, a gem of the old Edo period (1603-1868). It is the capital's most famous and oldest Buddhist temple, founded in 628. The famed entrance gate Kaminari-mon (Thunder Gate) with its huge red lantern is a symbol of Asakusa. The 200m-long street of traditional stalls, which leads from the Kaminari-mon to the temple, is always enjoyed by visitors.

COMPSAC 2018 would like to thank all of our sponsors and supporters!

IEEE and the IEEE Computer Society are the sole sponsors of COMPSAC.

IPSJ, The Information Processing Society of Japan, is a technical co-sponsor of COMPSAC. IPSJ, as the largest and leading society in the information technology in Japan, plays a key role for realizing the information society of the 21st century through its academic, cultural and industrial activities.

IEEE Future Directions is a 2018 Silver Sponsor. Future Directions offers resources to emerging technologies including events, technical papers and resources such as webinars, videos, newsletters and podcasts. Future Directions serves as a link to technical communities within IEEE.

JPRS, the Japan Registry Services, is a Bronze Sponsor. JPRS is a company dedicated to maintaining the Internet infrastructure of Japan. JPRS contributes to the development of the Internet and the building of a better future for everyone.

TCVB is the Tokyo Convention and Visitors Bureau. Along with the Tokyo Metropolitan Government, they are offering tours of local sites in Tokyo for overseas visitors to COMPSAC.

Waseda University, located in Shinjuku, Tokyo is a Japanese private university, and consistently ranks among the most academically selective and prestigious universities in Japanese university rankings.

Proxor is hosting their Java Programming T-1 Challenge at COMPSAC 2018.



Mon. July 23	Meeting Hall 1	Meeting Hall 2	Meeting Hall 3	Meeting Hall 4	Meeting 101	Meeting 102	Meeting 103	Meeting 201	Meeting 202	Meeting 203	Meeting 2009/10
9:30 - 11:00am	ADMNET 1	SCA 1	AIML 1	IWFIT				BIG DATA HACKATHON			PROXOR HACKATHON
11:00 - 11:30am	BREAK										
11:30 - 1:00pm	ADMNET 2	SCA 2	AIML 2	CDS 1	ESAS 1	CFSE 1	MEDICOMP 1	BIG DATA HACKATHON	STA 1	STPSA 1	PROXOR HACKATHON
1:00 - 2:00pm	LUNCH BREAK										
2:00 - 3:30pm	ADMNET 3	SCA 3	AIML 3	CDS 2	ESAS 2	CFSE 2	MEDICOMP 2	BIG DATA HACKATHON	STA 2	STPSA 2	PROXOR HACKATHON
3:30 - 4:00pm	BREAK										
4:00 - 5:30pm		SCA 4A	AIML 4	CDS 3	ESAS 3	CFSE 3	SCA 4B	BIG DATA HACKATHON	STA 3	STPSA 3	PROXOR HACKATHON
Tues. July 24	Meeting Hall 1	Meeting Hall 2	Meeting Hall 3	Meeting Hall 4	Meeting 101	Meeting 102	Meeting 103	Meeting 201	Meeting 202	Meeting 203	Meeting 2009/10
9:00 - 10:30am	PLENARY OPENING SESSION KEYNOTE: MARGARET MARTONOSI, PRINCETON UNIVERSITY, USA LOCATION: HITOTSUBASHI HALL										
10:30 - 11:00am	BREAK										
11:00 - 12:30pm	SETA 1	SETA 2	HCSC 1	DSAT 1	EATA 1		ITIP 1	BIG DATA HACKATHON	FAST ABSTRACT 1	SEPT 1	
12:30 - 1:30pm	LUNCH BREAK										
1:30 - 3:00pm	SETA 3	SETA 4	HCSC 2	DSAT 2	EATA 2		ITIP 2	BIG DATA HACKATHON	FAST ABSTRACT 2	SEPT 2	
3:00 - 3:30pm	BREAK										
3:30 - 5:00pm	SETA 5	SETA 6	CAR PANEL	DSAT 3	EATA 3	CAP 1	ITIP 3	BIG DATA HACKATHON	FAST ABSTRACT 3	SEPT 3	
6:30pm	COMPSAC 2018 CONFERENCE RECEPTION LOCATION: GAKUSHIKAIKAN										
Wed. July 25	Meeting Hall 1	Meeting Hall 2	Meeting Hall 3	Meeting Hall 4	Meeting 101	Meeting 102	Meeting 103	Meeting 201	Meeting 202	Meeting 203	Meeting 2009/10
9:00 - 10:30am	KEYNOTE: MASARU KITSUREGAWA, DIRECTOR GENERAL, NATIONAL INSTITUTE OF INFORMATICS, JAPAN LOCATION: HITOTSUBASHI HALL										
10:30 - 11:00am	BREAK										
11:00 - 12:30pm	SETA 7	SETA 8	HCSC 3	DSAT 4	AI PANEL	CAP 2	OER PANEL	GENOME PANEL	FAST ABSTRACT 4	ETA KAPPA NU	
12:30 - 1:30pm	LUNCH BREAK										

1:30 - 2:30pm	KEYNOTE: DEJAN MILOJICIC, HEWLETT PACKARD LABS, USA LOCATION: HITOTSUBASHI HALL										
2:30 - 3:00pm	BREAK										
3:00 - 4:00pm	PLENARY PANEL: A SMARTER FUTURE LOCATION: HITOTSUBASHI HALL										
4:00 - 5:30pm	PLENARY PANEL: YOUNG PROFESSIONALS LOCATION: HITOTSUBASHI HALL										
6:30pm	COMPSAC 2018 BANQUET LOCATION: RIHGA ROYAL HOTEL TOKYO										
Thurs. July 26	Meeting Hall 1	Meeting Hall 2	Meeting Hall 3	Meeting Hall 4	Meeting 101	Meeting 102	Meeting 103	Meeting 201	Meeting 202	Meeting 203	Meeting 2009/10
9:00 - 10:30am	KEYNOTE: BJARNE STROUSTRUP, MORGAN STANLEY, COLUMBIA UNIVERSITY, USA LOCATION: HITOTSUBASHI HALL										
10:30 - 11:00am	BREAK										
11:00 - 12:30pm	SETA 9	SETA 10	SETA 11	DSAT 5		MOWU 1	NCIW 1		SRS 1	CELT 1	
12:30 - 1:30pm	LUNCH BREAK										
1:30 - 3:00pm	SETA 12	SETA 13	SETA 14	DSAT 6		MOWU 2	NCIW 2		SRS 2	CELT 2	
3:00 - 3:30pm	BREAK										
3:30 - 5:00pm	PLENARY PANEL: FUTURE OF COMPUTING LOCATION: HITOTSUBASHI HALL										
5:00 - 6:00pm	PLENARY PLANNING MEETING: COMPSAC 2019 (ALL INVITED) LOCATION: HITOTSUBASHI HALL										
Fri. July 27	Meeting Hall 1	Meeting Hall 2	Meeting Hall 3	Meeting Hall 4	Meeting 101	Meeting 102	Meeting 103	Meeting 201	Meeting 202	Meeting 203	Meeting 2009/10
9:30 - 11:00am	BIOT 1	SDIM 1	EACIS 1	INFOFLOW 1	NETSAP 1	SAPSE 1	QUORS 1			SIS-SS	
11:00 - 11:30am	BREAK										
11:30 - 1:00pm	BIOT 2	SDIM 2	EACIS 2	INFOFLOW 2	NETSAP 2	SAPSE 2			BIG DATA WORKSHOP	IEESD	

Monday July 23**9:30 – 11:00am Workshop Sessions****ADMNET: The 6th IEEE International Workshop on Architecture, Design, Deployment and Management of Networks and Applications****Session 1: Performance Evaluation & Improvement****Location: Meeting Hall 1****Session Chair: Takashi Yamanoue, Fukuyama University, Japan**

Invited Talk: *The Internet: Past, Current and Future—Challenges of Japan*
Hideki Sunahara

Development and Evaluation of the MEC Platform Supporting the Edge Instance Mobility

Tohru Kondo, Keitea Iwasaki, Kaori Maeda

SCA: The 1st IEEE International Workshop on Smart Computing & Applications**Session 1****Location: Meeting Hall 2****Session Chair: Chin-Yu Huang, National Tsing Hua University, Taiwan***Smart Applications in Heat and Power Systems*

Roman Kuznetsov, Valeri Chipulis, Eugene Voloshin

A Design of IoT-based Searching System for Displaying Victim's Presence Area

M Rosyidi, Ratih H Puspita, Shigeru Kashihara, Doudou Fall, Kazushi Ikeda

A Feature Envy Detection Method Based on Dataflow Analysis

Woei-Kae Chen, Chien-Hung Liu, Bo-Hong Li

AIML: The 1st IEEE International Workshop on Advances in AI and Machine**Learning: Research & Practice****Session 1****Location: Meeting Hall 3****Session Chair: Jun (Luke) Huan, Baidu Research, China***Review of Small Data Learning Methods*

Xiali Li, Songting Deng, Song Wang, Zhengyu Lv, Licheng Wu

A Deep Learning Approach for Estimating Inventory Rebalancing Demand in Bicycle Sharing Systems

Petar Mrazovic, Josep Luis Larriba-Pey, Mihhail Matskin

On Learning Fuel Consumption Prediction in Vehicle Clusters

Victor Parque, Tomoyuki Miyashita

An Approach to Proposing Novel Business Models Basing on Association Rules Learning, BP Neural Network and Creative Computing

Qinyun Liu, Lin Zhou, Hua Zhou, Hongji Yang

IWFIT: The 2nd IEEE International Workshop on Future Internet Technologies Session 1**Location: Meeting Hall 4****Session Chair: Koji Okamura, Kyushu University, Japan***An Adaptive Bandwidth Reservation Method for a Content-Centric Network*

Tomoharu Endo, Atsuko Yokotani, Satoshi Ohzahata, Ryo Yamamoto, Toshihiko Kato

A Mixed Integer Programming Solution for Network Optimization Under Tunneling-based Traffic Engineering Schemes

Tsubasa Munemitsu, Daisuke Kotani, Yasuo Okabe

A Probabilistic Interest Packet Aggregation for Content-Centric Networking

Yuichi Yasuda, Ryo Nakamura, Hiroyuki Ohsaki

Bio-inspired Model for Data Distribution in Fog and Mist Computing

Danilo Vasconcelos, Valdenir Severino, Marcio Maia, Rossana Andrade, Jose Neuman

Big Data Hackathon**Location: Meeting 201****Session Chair: Wo Chang, National Institute of Standards and Technology (NIST), USA****11:00 – 11:30am****Break****11:30 – 1:00pm****Workshop Sessions****ADMNET: The 6th IEEE International Workshop on Architecture, Design, Deployment and Management of Networks and Applications****Session 2: Performance Evaluation & Improvement****Location: Meeting Hall 1****Session Chair: Tohru Kondo, Hiroshima University, Japan***Towards Effective Generation of Synthetic Memory References Via Markovian Models*

Alfredo Cuzzocrea, Enzo Mumolo, Marwan Hassani, Giorgio Mario Grasso

Throughput Improvement on MPTCP Selective Bicasting by Cross-Layer Control in Wireless Environment

Masami Fukuyama, Nariyoshi Yamai, Satoshi Ohzahata, Naoya Kitagawa

System Resource Management to Control the Risk of Data-Loss in a Cloud-Based Disaster Recovery

Yuichi Taguchi, Tsutomu Yoshinaga

A Load-balanced Approach to Time Efficient Resource Scheduling in SDN-enabled Data Center

Huaiying Sun, Huiqun Yu, Guisheng Fan, Chen Liqiong

SCA: The 1st IEEE International Workshop on Smart Computing & Applications Session 2**Location: Meeting Hall 2****Session Chair: Chin-Yu Huang, National Tsing Hua University, Taiwan**

How Agile Impacts a Software Corporation: An Empirical Study
Hwai-Jung Hsu, Yves Lin

Time-Aware Recommendation Based on User Preference Driven
Thitiporn Neammanee, Saranya Maneeroj

Smart Block: A Visual Programming Environment for SmartThings
Nayeon Bak, Byeong-Mo Chang, Kwanghoon Choi

Improving the Smartness of Cloud Management via Machine Learning Based Workload Prediction
Yongjia Yu, Vasu Jindal, Farokh Bastani, Fang Li, I-Ling Yen

AIML: The 1st IEEE International Workshop on Advances in AI and Machine Learning: Research & Practice
Session 2
Location: Meeting Hall 3
Session Chair: Takahira Yamaguchi, Keio University, Japan

Mining Sequential Patterns to Explore Users' Learning Behavior in a Visual Programming App
Wen-Chung Shih

Predicting Decisions of the Philippine Supreme Court Using Natural Language Processing and Machine Learning
Michael Benedict Virtucio, Jeffrey Aborot, John Kevin Abonita, Roxanne Aviñante, Rother Jay Copino, Michelle Neverida, Vanesa Osiana, Elmer Peramo, Joanna Syjuco and Glenn Brian Tan

Prediction Method of Blasting Vibration by Optimized GEP Based on Spark
Yunlan Wang, Bin Zhang, Tianhai Zhao, Zhengxiong Hou, Xiangyu Wu, Hussain Khanzada Muzammil

Empirical Evaluation of "Idle-Time Analysis" Driven Improved Decision Making by Always-On Agents
Sravyasri Garapati, Kamalakar Karlapalem

CDS: The 6th IEEE International Workshop on Consumer Devices & Systems
Session 1
Location: Meeting Hall 4
Session Chair: Yasuo Okabe, Kyoto University, Japan

Community Energy Management System to Encourage Power Saving Competition
Takahiro Fujiwara, Kai Takashima, Toshihiko Tanaka, Shigeo Kaneda
Development of Bicycle Simulator with Tilt Angle Control Tilt Angle
Tetsuji Yamaguchi, Akira Yamada, Takeshi Fujiwara, Ryoichi Takahashi, Tetsuya Shimada, Yuki Ishida, Koichiro Ueda, Shigeo Kaneda

Interaction with Platform Games Using Smartwatches and Continuous Gesture Recognition: A Case Study
Thamer Hobylon Nascimento, Fabrizzio Alphonsus Alves de Melo Nunes Soares, Hugo Alexandre Dantas do Nascimento, Rogerio Lopes Salvini, Mateus Machado Luna, Cristhiane Gonvalves, Eduardo Faria de Souza

Information Harvesting Method by an Energy Harvesting Device with Multiple Microcontrollers
Tadanobu Tsunoda, Kazuaki Nimura

ESAS: The 13th IEEE International Workshop on E-Health Systems and Web Technologies
Session 1: E-health and Staying Smarter
Location: Meeting 101
Session Chair: Atilla Elci, Aksaray University, Turkey

Situ-centric Reinforcement Learning for Recommendation of Tasks in Activities of Daily Living in Smart Homes
Richard Oyeleke, Chen-Yeou Yu, Carl Chang

Development of a Performance Visualization Model of Basic Life Support Training with Feedback Devices for Mobile Application
Navadon Khunlertgit

CFSE: The 10th IEEE International Workshop on Computer Forensics in Software Engineering
Session 1
Location: Meeting 102
Session Chair: Tetsutaro Uehara, Ritsumeikan University, Japan

Video Forensics for Detecting Shot Manipulation Using the Information of Deblocking Filter
Chen-Kuang Hsieh, Ching-Chun Chiu, Po-Chyi Su

Design Scheme of Copyright Management System Based on Digital Watermarking and Blockchain
Zhaoxiong Meng, Tetsuya Morizumi, Sumiko Miyata, Hirotsugu Kinshita

Copy-move Forgery Detection using GLCM-based Rotation-invariant Feature: A Preliminary Research
Songpon Teerakanok, Tetsutaro Uehara

MEDICOMP: The 5th IEEE International Workshop on Medical Computing
Session 1
Location: Meeting 103
Session Chair: Ji-Jiang Yang, Tsinghua University, China

Emotion Recognition Based on Photoplethysmogram and Electroencephalogram
Zhongkai Tong, Zhen Fang, Xianxiang Chen, Kai Tong, Zhengling He, Xianlong Wang

Gastric Pathology Image Recognition Based on Deep Residual Networks
Bo Liu, Kelu Yao, Mengmeng Huang, Jiahui Zhang, Yong Li, Rong Li

Vessel Recognition of Retinal Fundus Images Based on Fully Convolutional Network
Jianqiang Li, Qidong Hu, Azhar Imran, Li Zhang, Ji-jiang Yang, Qing Wang

STA: The 10th IEEE International Workshop on Software Test Automation

Session 1: Tools & Advanced Techniques

Location: Meeting 202

Session Chair: AKM Jahangir Majumder, Miami University, USA

Property-Based Testing of Browser Rendering Engines with a Consensus Oracle
Joel Martin, David Levine

A Projection-based Approach for Memory Leak Detection
Xiaohui Sun, Jing Xu, Chenkai Guo, Sihan Xu, Naipeng Dong, Xiujuan Ji, Sen Zhang

STPSA: The 13th IEEE International Workshop on Security, Trust, and Privacy for Software Applications

Session 1

Location: Meeting 203

Session Chair: Natalia Stakhnova, University of New Brunswick, Canada

Identifying Security Spots for Data Integrity
Pushkar Ogale, Michael Shin, Sasanka Abeysinghe

A Privacy Safeguard Framework for a WebRTC/WoT-based Healthcare Architecture
Saad El Jaouhari, Ahmed Bouabdallah

Removing Software Vulnerabilities During Design
George Yee

Big Data Hackathon

Location: Meeting 201

Session Chair: Wo Chang, National Institute of Standards and Technology (NIST), USA

1:00 - 2:00pm Lunch Break
2:00 - 3:30pm Workshop Sessions

ADMNET: The 6th IEEE International Workshop on Architecture, Design, Deployment and Management of Networks and Applications
Session 3: Security & Management
Location: Meeting Hall 1
Session Chair: Nariyoshi Yamai, Tokyo University of Agriculture and Technology, Japan

On the Confirmation Method of the User's Record of the GakuNinMoodle
Nobukuni Hamamoto, Shigetoshi Yokoyama, Hiroshi Ueda

Large-scale Certificate Management on Multi-tenant Web Servers
Ryosuke Matsumoto, Kenji Rikitake, Kentaro Kuribayashi

Security Requirement Modeling Support System Using Software Security Knowledge Base

Tatsuo Hazeyama, Shun'ichi Tanaka, Takafumi Tanaka, Hiroaki Hashiura, Seiji Munetoh, Takao Okubo, Haruhiko Kaiya, Hironori Washizaki, Nobukazu Yoshioka

SCA: The 1st IEEE International Workshop on Smart Computing & Applications
Session 3

Location: Meeting Hall 2

Session Chair: Feng-Jian Wang, National Chaio Tung University, Taiwan

A New Way of Being Smart: Creative Computing and Its Applications in Tourism
Lu Zhang, Hongji Yang, Chi Zhang, Nao Li

A Wisdom Search Engine
Hongji Yang, Sicong Ma, Lin Zou, Qinyun Liu

Successive POI Recommendation with Category Transition and Temporal Influence
I-Cheng Lin, Yi-Shu Lu, Wen-Yueh Shih, Jiun-Long Huang

AIML: The 1st IEEE International Workshop on Advances in AI and Machine Learning: Research & Practice

Session 3

Location: Meeting Hall 3

Session Chair: Ryohei Orihara, Toshiba, Japan

Practice of Multi-Robot Teahouse based on PRINTEPS and Evaluation of Service Quality

Takeshi Morita, Naho Kashiwagi, Ayanori Yorozu, Michael Walch, Hideo Suzuki, Dimitris Karagiannis, Takahira Yamaguchi

Transfer Learning Method for Very Deep CNN for Text Classification and Methods for its Evaluation

Shun Moriya, Chihiro Shibata

Understanding Mindsets Across Markets, Internationally: A Public-Private Innovation Project for Developing a Tourist Data Analytic Platform

Kristoffer Jon Albers, Mikkel N. Schmidt, Morten Mørup, Marisciel Litong-Palima, Rasmus Bonnevie, Fumiko Kano Glückstad

Modified Memetic Self-Adaptive Firefly Algorithm for 2D Fractal Image Reconstruction

Akemi Galvez, Andres Iglesias

**CDS: The 6th IEEE International Workshop on Consumer Devices & Systems
Session 2**

Location: Meeting Hall 4

Session Chair: Yasuo Okabe, Kyoto University, Japan

Adapted Decision Support service based on the Prediction of Offline consumers' Real-Time Intention and devices interactions

Fanjuan Shi, Chirine Ghedira Guegan

Text Entry on SmartWatches: A Systematic Review of Literature

Mateus M. Luna, Fabrizzio Alphonsus A. M. N. Soares, Joyce Siqueira, Hugo A. D. Nascimento, Thamer H. Horbylon Nascimento, Eduardo Faria de Souza, Ronaldo Martins da Costa

The Use of System Development Methodologies in the Development of Mobile Applications: Are They Worthy of Use?

Wilfred Okonkwo, Magda Huisman

Situation Based Energy Management Framework on Mobile Devices

Chen-Yeou Yu, Richard O. Oyeleke, Carl K. Chang

ESAS: The 13th IEEE International Workshop on E-Health Systems and Web Technologies

Session 2: Applications for E-health and Staying Smarter

Location: Meeting 101

Session Chair: Carl K. Chang, Iowa State University, USA

Ontology-based Obesity Tracking System for Children and Adolescents

Ozgu Tacyildiz, Duygu Celik Ertugrul, Yiltan Bitirim, Nese Akcan, Atilla Elci

Are mHealth Apps Secure? A Case Study

Alessio Della Libera, Chiara Braghin, Stelvio Cimato

CFSE: The 10th IEEE International Workshop on Computer Forensics in Software Engineering

Session 2

Location: Meeting 102

Session Chair: Tetsutaroh Uehara, Ritsumeikan University, Japan

The Expansion of Source Code Abbreviations Using a Language Model

Abdulrahman Alatawi, Weifeng Xu, Jie Yan

Modeling and Verifying OpenFlow Scheduled Bundle Mechanism using CSP

Huiwen Wang, Huibaiao Zhu, Lili Xiao, Wanling Xie, Gang Lu

**MEDICOMP: The 5th IEEE International Workshop on Medical Computing
Session 2**

Location: Meeting 103

Session Chair: Ji-Jiang Yang, Tsinghua University, China

A Childhood Disease Database based on Word Segmentation Technology: Research and Practice

Shu Wang, Min Chen, Mingyue Wei, Shishi Ma, Guangjun Yu

Retinal Vessel Segmentation Based on an Improved U-Net

Zhiqiang Qiao, Qinyan Zhang, Ying Cao, Jijiang Yang

**STA: The 10th IEEE International Workshop on Software Test Automation
Session 2: Fault Prediction, Injection & Coverage**

Location: Meeting 202

Session Chair: Hossain Shahriar, Kennesaw State University, USA

Generating Realistic Logically Unreasonable Faulty Data for Fault Injection

Ju Qian, Fusheng Lin, Changjian Li, Zhiyi Zhang, Zhe Chen

High-frequency Keywords to Predict Defects for Android Applications

Yaqing Fan, Xinya Cao, Jing Xu, Sihan Xu, Hongji Yang

STPSA: The 13th IEEE International Workshop on Security, Trust, and Privacy for Software Applications

Session 2

Location: Meeting 203

Session Chair: Hasan Jamil, University of Idaho, USA

Resource and Role Hierarchy Based Access Control for Resourceful Systems

Nidhiben Solanki, Yongtao Huang, I-Ling Yen, Farokh Bastani, Yuqun Zhang

An Unknown Malware Detection Using Execution Registry Access

Sanouphab Phomkeona, Kento Kono, Koji Okamura

A Security Assessment of HCE-NFC enabled E-Wallet Banking Android Apps

Ratinder Kaur, Yan Li, Junaid Iqbal, Hugo Gonzalez, Natalia Stakhanova

Big Data Hackathon

Location: Meeting 201

Session Chair: Wo Chang, National Institute of Standards and Technology (NIST), USA

3:30 – 4:00pm

Break

4:00 – 5:30pm

Workshop Sessions

**SCA: The 1st IEEE International Workshop on Smart Computing & Applications
Session 4A**

Location: Meeting Hall 2

Session Chair: Nien-Lin Hsueh, Feng Chia University, Taiwan

Indoor Augmented Reality Using Deep Learning for Industry 4.0 Smart Factories

Hanas Subakti, Jehn-Ruey Jiang

NFS: An Algorithm for Avoiding Restarts to Improve the Efficiency of Crawling Android Applications

Chien-Hung Liu, Woei-Kae Chen, Shu-Hang Ho

Test Command Auto-Wait Mechanisms for Record and Playback-Style Web Application Testing

Shin-Jie Lee, Yu-Xian Chen, Shang-Pin Ma, Wen-Tin Lee

Using Service Dependency Graph to Analyze and Test Microservices

Shang-Pin Ma, Chen-Yuan Fan, Yen Chuang, Wen-Tin Lee, Shin-Jie Lee, Nien-Lin Hsueh

AIML: The 1st IEEE International Workshop on Advances in AI and Machine Learning: Research & Practice

Session 4

Location: Meeting Hall 3

Session Chair: San Murugesan, BRITE Professional Services, Australia

Approximation of Time-Consuming Simulation Based on Generative Adversarial Network

Ryohei Orihara, Ryota Narasaki, Yuma Yoshinaga, Yasuhiro Morioka, Yoshiyuki Kokojima

Model-Space Regularization and Fully Interpretable Algorithms for Postural Control Quantification

Alice Nicolaï, Julien Audiffren

Generation of Character Illustrations from Stick Figures using a Modification of Generative Adversarial Network

Yuuya Fukumoto, Daiki Shimizu, Chihiro Shibata

NDFMF: An Author Name Disambiguation Algorithm based on the Fusion of Multiple Features

Xiaolong Xu, Yongping Li, Mark Liptrott, Nik Bessis

CDS: The 6th IEEE International Workshop on Consumer Devices & Systems

Session 3

Location: Meeting Hall 4

Session Chair: Atsushi Tagami, KDDI Research, Inc., Japan

Application on Intersection Classification Algorithm Based on Clustering Analysis

Hao Wang, Dong Chen

Using Interactive E-books in Elementary School Origami Activities: Analysis of Learning Effect, Learning Motivation and Cognitive Load

Wen-Jung Chu, Hong-Ren Chen

Process Modeling, Behavior Analytics and Group Performance Assessment of e-Learning Logs via Fuzzy Miner Algorithm

Wichian Premchaiswadi, Parham Porouhan, Nucharee Premchaiswadi

Who Are Interested in Open Education? An Analysis of the Participants in the First MOOC of the IEEE Education Society

Rosa Cabedo, Edmundo Tovar, Sergio Martin, Martin Llamas, Manuel Caeiro, Oscar Martinez, Rebecca Strachan, Manuel Castro, Sorel Reisman

ESAS: The 13th IEEE International Workshop on E-Health Systems and Web Technologies

Session 3: Monitoring for E-health and Staying Smarter

Location: Meeting 101

Session Chair: Stelvio Cimoto, University of Milan, Italy

An Android Application for Geolocation Based Health Monitoring, Consultancy and Alarm System

Emre Oner Tartan, Cebraail Ciflikli

Knowledge Based e-Health Surveillance System for Predicting Hospital Acquired Infections

Amin Noaman, Abdul Ragab, Nabeela Al-Abdullah, Arwa Jamjoom, Farrukh Nadeem, Anser Ali

CFSE: The 10th IEEE International Workshop on Computer Forensics in Software Engineering

Session 3

Location: Meeting 102

Session Chair: Tetsutaro Uehara, Ritsumeikan University, Japan

A High-capacity Watermarking Algorithm Using Two Bins Histogram Modification

Zhen Yue, Zichen Li, Peifei Song, Shumei Zhang, Yixian Yang

TRAC: A Therapeutic Regimen-oriented Access Control Model in Healthcare

Hongcan Gao, Yanfeng Wu, Sihan Xu, Xiaolei Hou, Chenkai Guo, Jing Xu

Enhancing Inter-Node Process Migration for Load Balancing on Linux-based NUMA Multicore Systems

Mei-Ling Chiang, Shu-Wei Tu, Wei-Lun Su, Chen-Wei Lin

SCA: The 1st IEEE International Workshop on Smart Computing & Applications

Session 4B

Location: Meeting 103

Session Chair: Chiu-Hung Chang, Providence University, Taiwan

The Implementation of a Data-Accessing Platform Built from Big Data Warehouse of Electric Loads

Sheng-Cang Chou, Chao-Tung Yang, Fuu-Cheng Jiang, Chih-Hung Chang

The Integration of Shared Storages with the CephFS and Rados Gateway for Big Data Accessing

Jia-Yow Weng, Chao-Tung Yang, Chih-Hung Chang

The Learning Effectiveness Analysis of JAVA Programming with Automatic Grading System

Chorng-Shiuh Koong, Hsin-Ying Tsai, Yi-Yang Hsu, Yeh-Cheng Chen

A Creative IoT Platform for Cloud Fog Computing

Authors: Tse-Chuan Hsu, Hongji Yang, Dong-Meau Chang

STA: The 10th IEEE International Workshop on Software Test Automation

Session 3: Monitoring & Prioritization

Location: Meeting 202

Session Chair: Cristina Seceleanu, Malardalen University,

Synthetic Runtime Monitoring of Microservices Software Architecture

Panuchart Bunyakiati, Chadarat Phipathananunth

Test Case Prioritization for GUI Regression Testing Based on Centrality Measures

Yijie Ren, Bei-Bei Yin, Bin Wang

STPSA: The 13th IEEE International Workshop on Security, Trust, and Privacy for Software Applications

Session 3

Location: Meeting 203

Session Chair: Hossain Shahriar, Kennesaw State University, USA

Chained of Things: A Secure and Dependable Design of Autonomous Vehicle Services

Md Golam Moula Mehedi Hasan, Amarjit Datta, Mohammad Ashiqur Rahman, Hossain Shahriar

A Best-Effort Damage Mitigation Model for Cyber-Attacks on Smart Grids

Mohammad Ashrafuzzaman, Hasan Jamil, Yacine Chakhchoukh, Frederick Sheldon

Static Analysis of HIPPA Security Requirements in Electronic Health Record Applications

Maryam Farhadi, Hisham Haddad, Hossain Shahriar

Big Data Hackathon

Location: Meeting 201

Session Chair: Wo Chang, National Institute of Standards and Technology (NIST), USA

Tuesday July 24

9:00 – 10:30am Conference Opening Session

Keynote Address: Margaret Martonosi, Princeton University, USA

New Metrics and Models for a Post-ISA Era: Managing Complexity and Scaling Performance in Heterogeneous Parallelism and Internet-of-Things

Location: Hitotsubashi Hall

Session Chairs: Sorel Reisman and Sheikh Iqbal Ahamed, COMPSAC Standing Committee Chair and Vice Chair

10:30 – 11:00am Break

11:00 – 12:30pm Conference Symposia Sessions

SETA: Software Engineering Technologies & Applications

Session 1: Software

Location: Meeting Hall 1

Session Chair: Mikio Aoyama, Nanzan University, Japan

An Empirical Analysis on Web Service Anti-pattern Detection Using a Machine Learning Framework

Lov Kumar, Ashish Sureka

EFSM-oriented Minimal Traces Set Generation Approach for Web Applications

Weiwei Wang, Junxia Guo, Zheng Li, Ruilian Zhao

DevOps Improvements for Reduced Cycle Times with Integrated Test Optimizations for Continuous Integration

Dusica Marijan, Marius Liaaen, Sagar Sen

SETA: Software Engineering Technologies & Applications

Session 2: Functionality

Location: Meeting Hall 2

Session Chair: Jing Xu, Nankai University, China

A Multi-layered Desires Based Framework to Detect Users' Evolving Non-functional Requirements

Peng Sun, Jingwei Yang, Hua Ming, Carl Chang

A Framework for Updating Functionalities Based on the MAPE Loop Mechanism

Shinya Tsuchida, Hiroyuki Nakagawa, Emiliano Tramontana, Andrea Fornaia, Tatsuhiro Tsuchiya

Using Code Evolution Information to Improve the Quality of Labels in Code Smell Data Sets

Yijun Wang, SongyuanHu, Linfeng Yin, Xiaocong Zhou

HCSC: Human Computing & Social Computing

Session 1

Location: Meeting Hall 3

Session Chair: Katsunori Oyama, Nihon University, Japan

Coarsening Network Based on Local Link Similarity for Community Detection
YuZhu Wu, QianWen Zhang, JinKui Xie

What Graphs Do International Investors See in the ASEAN Capital Markets?
Uthai Tanlamai

Decision Making Support of UAV Path Planning for Efficient Sensing in Radiation Dose Mapping
Tokishi Morita, Katsunori Oyama, Taiju Mikoshi, Toshihiro Nishizono

DSAT: Data Sciences, Analytics & Technologies

Session 1

Location: Meeting Hall 4

Session Chair: Wo Chang, National Institute of Standards and Technology (NIST), USA

Knowledge Map Construction Using Text Mining and Artificial Bee Colony Algorithm
Chieh-Yuan Tsai, Wei-Zhong Ji

Mining Rules from Real-valued Time Series: A Relative Information-Gain-based Approach
Yuanduo He, Guangju Peng, Xu Chu, Yasha Wang, Zhu Jin, Xiaorong Wang

World Grid Square Data Reference Framework and its Potential Applications
Aki-Hiro Sato, Shoki Nishimura, Hiroe Tsubaki, Tsuyoshi Namiki

EATA: Emerging Advances in Technology & Applications

Session 1: Future Computing Technologies

Location: Meeting 101

Session Chair: Ali Hurson, Missouri University of Science & Technology, USA

TBAC: Transaction-based Access Control on Blockchain for Resource Sharing with Cryptographically Decentralized Authorization
Yan Zhu, Yao Qin, Guohua Gan, Shuai Yang, William Cheng-Chung Chu

Object Naming Service Supporting Heterogeneous Object Code Identification for IoT System
Duo Ding, Minbo Li, Zhu Zhu

Energy Efficient Scheduling for Heterogeneous Fog Computing Architectures
Hsiang-Yi Wu, Che-Rung Lee

ITIP: IT in Practice

Session 1

Location: Meeting Hall 103

Session Chair: Morris Chang, University of South Florida, USA

Load Prediction for Data Centers Based on Database Service
Rui Cao, Zhaoyang Yu, Trent Marbach, Jing Li, Gang Wang, Xiaoguang Liu

Randomness Classes in Bugs Framework (BF): True-Random Number Bugs (TRN) and Pseudo-Random Number Bugs (PRN)
Irena Bojanova, Yaacov Yesha, Paul E. Black

Fast Abstract

Session 1

Location: Meeting 202

Session Chair: Hiroki Takakura, NII, Japan

Systematic Literature Review Regarding Communication Support in Project-based Learning of Software Development
Yutsuki Miyashita, Takafumi Tanaka, Atsuo Hazeyama

Painless Tennis Ball Tracking System
Wook-Sung Yoo, Zach Jones, Henok Atsbaha, David Wingfield

Remote Monitoring and Control Web Service for Internet of Heating
Bo Cheng, Shuai Zhao, Junliang Chen

Possiblistic Reasoning about Agent Systems
Tuan-Fang Fan, Churn-Jung Liao

An Enhanced Temperature Aware Routing Protocol in Wireless Body Area Networks
Beom-Su Kim, Babar Shah, Ki-Il Kim

On Selecting Collaborative Modeling tools
Panuchart Bunyakiat, Usa Sammapun

Machine Translation Considering Context Information Using Encoder-Decoder Model
Tetsuto Takano, Satoshi Yamane

SEPT: Security, Privacy & Trust

Session 1

Location: Meeting 203

Session Chair: Mohammad Zulkernine, Queen's University, Canada

Invited Talk: Bhavani Thuraisingham, University of Texas at Dallas

Big Data Hackathon

Location: Meeting 201

Session Chair: Wo Chang, National Institute of Standards and Technology (NIST), USA

12:30 – 1:30pm

Lunch Break

1:30 – 3:00pm

Conference Symposia Sessions

SETA: Software Engineering Technologies & Applications

Session 3: Software

Location: Meeting Hall 1

Session Chair: Y.T. Yu, City University of Hong Kong, Hong Kong

Combining Constraint Solving with Different MOEAs for Configuring Large Software Product Lines: A Case Study

Kai Shi, Huiqun Yu, Jianmei Guo, Guisheng Fan, Xingguang Yang, Liqiong Chen

Cross-Project Change-Proneness Prediction

Chao Liu, Dan Yang, Xin Xia, Meng Yan, Xiaohong Zhang

Visualizing a Tangled Change for Supporting Its Decomposition and Commit Construction

Sarocho Sothornprapakorn, Shinpei Hayashi, Motoshi Saeiki

SETA: Software Engineering Technologies & Applications

Session 4: Mobile

Location: Meeting Hall 2

Session Chair: W.K. Chan, City University of Hong Kong, Hong Kong

An Assertion Framework for Mobile Robotic Programming with Spatial Reasoning

Hao Sun, Xiaoxing Ma, Tiansi Dong, Armin B. Cremers, Chun Cao

Exploration Scheduling in Event Replay for GUI Testing on Android Apps

Chia-Hui Lin, Cheng-Zen Yang, Tzu-Heng Lin, Zhi-Jun You

DroidCC: A Scalable Clone Detection Approach for Android Applications to Detect Similarity at Source Code Level

Junaid Akram, Zhendong Shi, Majid Mumtaz, Ping Luo

HCSC: Human Computing & Social Computing

Session 2

Location: Meeting Hall 3

Session Chair: Mikio Aoyama, Nanzan University, Japan

A Japanese Software Keyboard for Tablets that Reduces User Fatigue

Teppey Yajima, Hiroshi Hosobe

An Aurora Image Classification Method based on Improved Sparse Representation and Distributed WKNN

Yichun Li, Ningkan Jiang

DSAT: Data Sciences, Analytics & Technologies

Session 2

Location: Meeting Hall 4

Session Chair: Jie Li, University of Tsukuba, Japan

A Local Cores-based Hierarchical Clustering Algorithm for Data Sets with Complex Structures

Dongdong Cheng, Qingshen Zhu, Quanwang Wu

Web Items Recommendation Based on Multi-view Clustering

Hong Yu, Tiantian Zhang, Jiaxin Chen, Chen Guo, Yahong Lian

Characterizing Common and Domain-specific Package Bugs: A Case Study on Ubuntu

Xiaoxue Ren, Qiao Huang, Xin Xia, Zhenchang Xing, Lingfeng Bao, David Lo

EATA: Emerging Advances in Technology & Applications

Session 2: Vehicles & Transportation

Location: Meeting 101

Session Chair: Yuuichi Teranishi, NITC, Japan

Lane Change Detection Algorithm on Real World Driving for Arbitrary Road Infrastructures

Jennie Lioris, Annie Bracquemond, Laurent Bionic, Gildas Thiolon

Mapping of Sensor and Route Coordinates for Smart Cities

Yasir Saleem, Noel Crespi

A Discrete Differential Evolution Algorithm for Carpooling

Fu-Shiung Hsieh, Fu-Min Zhan

ITIP: IT in Practice

Session 2

Location: Meeting Hall 103

Session Chair: Irena Bojanova, National Institute of Standards and Technology (NIST), USA

An IoT Platform for Civil Infrastructure Monitoring

Seongwoon Jeong, Kincho Law

The Smart-X Model for Smart Cities

Nishtha Kesswani, Sanjay Kumar

Fast Abstract

Session 2

Location: Meeting 202

Session Chair: Dave Towey, University of Nottingham Ningbo China

Spatio-temporal Data Retention System with MEC for Local Production and Consumption

Daiki Nobayashi, Kazuya Tsukamoto, Takeshi Ikenaga, Mario Gerla

Designing a Computer Detective Game for Science Education

Fu-Hsing Tsai

Model Check of Real-time Property of Embedded Assembly Program Using CEGAR

Hiromu Kamide, Kosuke Uemura, Satoshi Yamane

Comprehensive Data Tree by Actor Messaging for Incremental Hierarchical Clustering

Taiki Shimizu, Kohei Sakurai

Applying Code Vectors for Presenting Software Features in Machine Learning

Hyun-il Lim

A Framework for Real Time Emotion Recognition Based on Human ANS using Pervasive Device

Feri Setiawan, Sunder Ali Khowaja, Aria Ghora Prabono, Bernardo Nugroho Yahya, Seok-Lyong Lee

A New Approach for the Verification of BPMN Models Using Refinement Patterns

Salma Ayari, Yousra Ben Dali Hlaoui, Leila Jemni Ben Ayed

SEPT: Security, Privacy & Trust

Session 2

Location: Meeting 203

Session Chair: Eun-Sun Cho, Chungnam National University, Korea

Towards Light-weight Deep Learning Based Malware Detection

Zeliang Kan, Haoyu Wang, Guoai Xu, Yao Guo, Xiangqun Chen

ACP: An Efficient User Location Privacy Preserving Protocol for Opportunistic Mobile Social Networks

Rui Huang, Yichao Lin, Bidi Ying, Amiya Nayak

The Impact of Lightweight Disassembler on Malware Detection: An Empirical Study

Donghong Zhang, Zhenyu Zhang, Bo Jiang, T.H. Tse

A Pull-type Security Patch Management of an Intrusion Tolerant System under a Periodic Vulnerability Checking Strategy

Junjun Zheng, Hiroyuki Okamura, Tadashi Dohi

Big Data Hackathon

Location: Meeting 201

Session Chair: Wo Chang, National Institute of Standards and Technology (NIST), USA

3:00 – 3:30pm Break

3:30 – 5:00pm Conference Symposia Sessions

SETA: Software Engineering Technologies & Applications

Session 5: Concurrency

Location: Meeting Hall 1

Session Chair: Rui Wang, Capital Normal University, China

DistGear: A Lightweight Event-driven Framework for Developing Distributed Applications

Junming Ma, Bo An, Donggang Cao, Xiangqun Chen

A Lightweight Program Dependence Based Approach to Concurrent Mutation Analysis

Chang-ai Sun, Jingting Jia, Huai Liu, Xiangyu Zhang

GBRAD: A General Framework to Evaluate Design Strategies for Hybrid Race Detection

Jialin Yang, W.K. Chan, Y.T. Yu, Jacky Keung

SETA: Software Engineering Technologies & Applications

Session 6: Cloud

Location: Meeting Hall 2

Session Chair: Ian Bayley, Oxford Brookes University, UK

SPESC: A Specification Language for Smart Contracts

Xiao He, Bohan Qin, Yan Zhu, Xing Chen, Yi Liu

An Insight Into the Impact of Dockerfile Evolutionary Trajectories on Quality and Latency

Yang Zhang, Gang Yin, Tao Wang, Yue Yu, Huaimin Wang

Improving Cluster Resource Efficiency with Oversubscription

Jie Chen, Chun Cao, Ying Zhang, Xiaoxing Ma, Haiwei Zhou, Chengwei Yang

Panel: Creating Autonomous Vehicle Systems

Location: Meeting Hall 3

Moderator/Session Chair: Jean-Luc Gaudiot, 2017 IEEE Computer Society President

Panelists: Shaoshan Liu, PerceptIn

Jialin Jiao, Uber

Songwen Pei, University of Shanghai for Science & Technology, China

Jie Tang, South China University of Technology, China

DSAT: Data Sciences, Analytics & Technologies

Session 3

Location: Meeting Hall 4

Session Chair: Tsung Teng Chen, National Taipei University, Taiwan

Deciphering the Big Data Research Themes

Tsung Teng Chen, Maria Lee

Towards Lambda-based Near Real-time OLAP over Big Data

Alfredo Cuzzocrea, Rim Moussa

Characterizing Incidents in Cloud-based IoT Data Analytics

Hong-Linh Truong, Manfred Halper

Efficient Discovery of Traveling Companion from Evolving Trajectory Data Stream

Thi Thi Shein, Sutheera Puntheeranurak, Makoto Imamura

EATA: Emerging Advances in Technology & Applications

Session 3: Emerging Applications

Location: Meeting 101

Session Chair: Hiroyuki Sato, The University of Tokyo, Japan

Formal Analysis of k-Resiliency for Collaborative UAVs

A H M Jakaria, Mohammad Ashiqur Rahman

Image Processing Strategies for Automatic Detection of Common Gastroenterological Disease

Rafael Neujahr Copstein, Vincenzo Abichequer, Matheus Cruz Andrade, Lucas Almeida Machado, Evandro Rodrigues, Leonardo Pavanatto Soares, Marcio Sarroglia Pinho

CAP: Computer Architectures & Platforms

Session 1: Scheduling & Communication

Location: Meeting 102

Session Chair: Keiji Kimura, Waseda University, Japan

Adaptive Splitting-based Block I/O Scheduling in Disk Storage

Hui Li, Shangxiong Chen, Guoqiang Xiao, Xiaoning Peng, Jianwei Liao, Jianwei Liao

A Market-oriented Heuristic Algorithm for Scheduling Parallel Applications in Big Data Service Platform

Qingshi Shao, Shijun Liu, Li Pan, Chenglei Yang, Tingting Niu

Column-Partition and Row-Partition Turn Model

Yuan Cai, Wei Luo, Dong Xiang

Research on Asynchronous Inter-VM Communication Mechanism Based on Embedded Hypervisor

Rui Wang, Libin Xu, Yuebin Bai, Kun Cheng, Zhongzhao Wang, Guangqiang Luan, Hailong Yang, Weitao Wang

ITIP: IT in Practice

Session 3

Location: Meeting 103

Session Chair: San Murugesan, BRITE Professional Services, Australia

Long Short-term Memory Neural Network for Artificial Dialogue Generation

Sid Ahmed Selouani, Mohammed Sidi Yakoub

Sentiment Classification System of Twitter Data for US Airline Service Analysis

Ankita Rane, Anand Kumar

WorkflowDSL: Scalable Workflow Execution with Provenance for Data Analysis Applications

Tharidu Fernando, Nikita Gureev, Mihhail Matskin, Michael Zwick, Thomas Natschlaeger

Fast Abstract

Session 3

Location: Meeting 202

Session Chair: Michiharu Takemoto, NTT, Japan

On Exploiting Temporal Periodicity for Message Delivery in Mobile Opportunistic Networks

Yu-Feng Hsu, Chih-Lin Hu, Hsin-Ju Hsiao

Cyclic Performance Fluctuation of TCP BBR

Kouto Miyazawa, Naoki Oda, Kanon Sasaki, Saneyasu Yamaguchi

Towards Efficient Network Resource Management in SDN-based Heterogeneous Vehicular Networks

Adnan Mahmood, Bernard Butler, Brendan Jennings

Clustering TLS Sessions Based on Protocol Fields Analysis

Hiroaki Yamauchi, Akihiro Nakao, Masato Oguchi, Shu Yamamoto, Saneyasu Yamaguchi

On Graph Representation with Smallest Numerical Encoding

Victor Parque, Tomoyuki Miyashita

Numerical Representation of Modular Graphs

Victor Parque, Tomoyuki Miyashita

Mitigating SDN Flow Table Overflow

Hanwu Luo, Wenzhen Li, Ying Qian, Liang Dou

SEPT: Security, Privacy & Trust

Session 3

Location: Meeting 203

Session Chair: Dianxiang Xu, Boise State University, USA

Proof of Contribution: A Modification of Proof of Work to Increase Mining Efficiency

Tengfei Xue, Ahmed Zahir, Krishna Moniz, Ganyuan Cao, Cong Wang, Yuyu Yuan

A Novel Secret Sharing Approach for Privacy-preserving Authenticated Disease Risk Queries in Genomic Databases

Maitraye Das, Nusrat Jahan Mozumder, Sharmin Afrose, Khandakar Ashrafi Akbar, Tanzima Hashem

Improving Fitness Function for Language Fuzzing with PCFG Model

Xiaoshan Sun, Yu Fu, Yun Dong, Zhihao Liu, Yang Zhang

Answering Multiple Aggregate Queries Under a Specific Privacy Condition

Jordi Aranda, Javier Herranz, Jordi Nin Guerrero

Big Data Hackathon

Location: Meeting 201

Session Chair: Wo Chang, National Institute of Standards and Technology (NIST), USA

Wednesday July 25**9:00 – 10:30am Plenary Session****Keynote Address: Masaru Kitsuregawa, Director General, NII, Japan***Transformational Role of Big Data in Society 5.0***Location: Hitotsubashi Hall****Session Chairs: Sorel Reisman and Sheikh Iqbal Ahamed, COMPSAC Standing Committee Chair and Vice Chair****10:30 – 11:00am Break****11:00 – 12:30pm Conference Symposia Sessions****SETA: Software Engineering Technologies & Applications****Session 7: Code Comments****Location: Meeting Hall 1****Session Chair: Chang-Ai Sun, University of Science & Technology Beijing, China***Automatic Detection of Outdated Comments During Code Changes*

Zhiyong Liu, Huanchao Chen, Xiangping Chen, Xiaonan Luo, Fan Zhou

Automatically Detecting the Scopes of Source Code Comments

Huanchao Chen, Zhiyong Liu, Xiangping Chen, Fan Zhou, Xiaonan Luo

*Investigating the Significance of the Bellwether Effect to Improve Software Effort**Prediction: Further Empirical Study (J1C2 paper)*

Solomon Mensah, Jacky Keung, Stephen MacDonell, Michael Bosu, Kwabena Bennin

SETA: Software Engineering Technologies & Applications**Session 8: Repair****Location: Meeting Hall 2****Session Chair: Eun-Sun Cho, Chungnam National University, Korea***Search-based Efficient Automated Program Repair Using Mutation and Fault**Localization*

Shuyao Sun, Junxia Guo, Ruilian Zhao, Zheng Li

Identifying Supplementary Bug-fix Commits

Tao Ji, Jinkun Pan, Liqian Chen, Xiaoguang Mao

HCSC: Human Computing & Social Computing**Session 3****Location: Meeting Hall 3****Session Chair: Filip Jagodzinski, Western Washington University, USA***Invited Talk: Deep Learning-based Assessment of Cognitive Dysfunction for Screening Test of Dementia*

Kaoru Sakatani

DSAT: Data Sciences, Analytics & Technologies**Session 4****Location: Meeting Hall 4****Session Chair: May Wang, Georgia Institute of Technology, USA***A Software Popularity Recommendation Method Based on Evaluation Model*

Yan Wang, Peixiang Bai, Deyu Yang, Jiantao Zhou, Xiaoyu Song

Analysis and Prediction of Endorsement-based Skill Assessment in LinkedIn

Yan Wu, Nitish Dhakal, Diaxiang Xu, Jin-Hee Cho

An Improved Promoter Recognition Model Using Convolutional Neural Network

Ying Qian, Yu Zhang, Sasha Ye, Bingyu Guo, Yuzhu Wu, Jiongmin Zhang

IT Professional 20th Anniversary Panel

San Murugesan, BRITE Professional Services, Australia

Panel: The New Realities of AI**Location: Meeting 101****Moderator/Session Chair: San Murugesan, BRITE Professional Services, Australia**

Panelists: Wo Chang, National Institute of Standards and Technology (NIST), USA

William Cheng Chung Chu, Tunghai University, Taiwan

Ryohei Orihara, Toshiba, Japan

Takahira Yamaguchi, Keio University, Japan

CAP: Computer Architectures & Platforms**Session 2: Algorithms & Verification****Location: Meeting 102****Session Chair: Cristina Seceleanu, Mälardalen University, Sweden***Measurement-based Evaluation of Data-parallelism for OpenCV Feature Detection Algorithms*

Jakob Danielsson, Marcus Jägemar, Tiberiu Seceleanu, Moris Behnam, Mikael Sjödin

SMT-based Timing Analysis and Verification of Real-time Tasks

Haifeng Xing, Jian-tao Zhou, Xiaoyu Song, Rui-dong Qi

Towards Fault-tolerant Task Backup and Recovery in the seL4 Microkernel

Guangqiang Luan, Yuebin Bai, Libin Xu, Chao Yu, Chunyang Wang, Junfang Zheng,

Qingbin Chen, Weitao Wang

Panel: Mainstreaming OERs for Computer Science & Information Technology Education**Location: Meeting 103****Moderator/Session Chair: Edmundo Tovar, Universidad Politécnica de Madrid, Spain**

Panelists: Tiziana Margaria, University of Limerick and Lero, the Irish Software Research Centre

Henry Chan, The Hong Kong Polytechnic University, Hong Kong

Dave Towey, University of Nottingham Ningbo China

Claudio Demartini, Politecnico di Torino, Italy

Fast Abstract

Session 4

Location: Meeting 202

Session Chair: Hossain Shahriar, Kennesaw State University, USA

An Integrated Memory and SSD Caching I/O Subsystem

Hsung-Pin Chang, Da-Wei Chang, Yu-Cain He

Benchmark Requirements for Assessing Software Security Vulnerability Testing Tools

Reza M. Parizi, Kai Qian, Hossain Shahriar, Fan Wu, Lixin Tao

Effects of Variable Part Auto Configuration and Management for Software Product Line

Taeho Kim, Sungwon Kang, Jihun Lee

Secure Mobile IPC Software Development with Vulnerability Detectors in Android Studio

Xianyong Meng, Kai Qian, Dan Lo, Md Arabin Islam Talukder, Hossain Shahriar, Prabir Bhattacharya

A Comparison of EEG and NIRS Biomarkers for Assessment of Depression Risk

Labiblaiz Rahman, Katsunori Oyama

Android Malware Detector Exploiting Convolutional Neural Network and Adaptive Classifier Selection

Yangxu Jin, Ting Liu, Ancheng He, Yu Qu, Jianlei Chi

Web Application Firewall: Network Security Models and Configuration

Victor Clincy, Hossain Shahriar

Empirical Analysis of Coding Standard Violation Focusing on Its Coverage and Importance

Aji Ery Burhandenny, Hirohisa Aman, Minoru Kawahara

Eta Kappa Nu

Location: Meeting 203

Session Chair: Paolo Montuschi, Politecnico di Torino, Italy

Panel: Exploring the Genome: Hurdles, Obstacles, and Solutions with the Genome Analysis Toolkit (GATK)

Location: Meeting 201

Panelists: Jonn Smith, The Broad Institute, USA

David Roazen, The Broad Institute, USA

Louis Bergelson, The Broad Institute, USA

Chris Norman, The Broad Institute, USA

James Emery, The Broad Institute, USA

12:30 – 1:30pm Lunch Break

1:30 – 2:30pm Plenary Session

Plenary Keynote: Dejan Milojicic, HP Labs, USA

Generalize or Die: Operating Systems Support for Memristor-based Accelerators

Location: Hitotsubashi Hall

Session Chairs: Sorel Reisman and Sheikh Iqbal Ahamed, COMPSAC Standing Committee Chair and Vice Chair

2:30 – 3:00pm

Break

3:00 – 4:00pm

Plenary Session

Plenary Panel: *A Smarter Future with New and Emerging Innovations and Predictions*

Location: Hitotsubashi Hall

Moderator/Session Chair: Kathy Grise, IEEE Future Directions

Panelists: Nicholas Napp, Xmark Labs, LLC

Robert Saracco, EIT ICTLABS Italy and Italy Node Director of EIT Digital

May Wang, Georgia Tech University, USA

Dejan Milojicic, Hewlett Packard Labs, USA

4:00 – 5:30pm

Plenary Session

Plenary Panel: *Young Professionals Panel*

Location: Hitotsubashi Hall

Moderator/Session Chair: Roger Fujii, 2016 IEEE Computer Society President

Panelists: Cecelia Metra, 2019 IEEE Computer Society President

Hironori Kasahara, 2018 IEEE Computer Society President

Dejan Milojicic 2014 IEEE Computer Society President

John Walz, 2012 IEEE Computer Society President

6:30pm

COMPSAC 2018 Banquet – Rihga Royal Hotel Tokyo

Thursday July 26**9:00 – 10:30am Plenary Session****Keynote: Bjarne Stroustrup, Columbia University, USA***What Students Should Know About C++***Location: Hitotsubashi Hall****Session Chairs: Sorel Reisman and Sheikh Iqbal Ahamed, COMPSAC Standing Committee Chair and Vice Chair****10:30 – 11:00am Break****11:00 – 12:30pm Conference Symposia Sessions****SETA: Software Engineering Technologies & Applications****Session 9: Verification****Location: Meeting Hall 1****Session Chair: Dave Towey, University of Nottingham Ningbo China***A Generalized Approach to Verification Condition Generation*

Cláudio Belo Lourenço, Maria João Frade, Shin Nakajima, Jorge Sousa Pinto

Runtime Verification of Robots Collision Avoidance Case Study

Chenxia Luo, Rui Wang, Yu Jiang, Kang Yang, Yong Guan, Xiaojuan Li, Zhiping Shi

Formalization and Verification of Mobile Systems Calculus Using the Rewriting Engine Maude

Wanling Xie, Huibiao Zhu, Min Zhang, Gang Lu, Yucheng Fang

SETA: Software Engineering Technologies & Applications**Session 10: Bugs****Location: Meeting Hall 2****Session Chair: Cheng-Zen Yang, Yuan Ze University, Taiwan***Predicting the Brakability of Blocking Bug Pairs*

Hui Ding, Lin Chen, Wanwangying Ma, Lin Chen, Yuming Zhou, Baowen Xu

Precise Extraction of Malicious Behaviors

Khanh Huu The DAM, Tayssir Touili

SETA: Software Engineering Technologies & Applications**Session 11: Prioritization****Location: Meeting Hall 3****Session Chair: Yan Cai, Chinese Academy of Sciences, China***ReTestDroid: Towards Safer Regression Test Selection for Android Applications*

Bo Jiang, Yu Wu, Yongfei Zhang, Zhenyu Zhang, W.K. Chan

How Do Software Metrics Affect Test Case Prioritization?

Masataka Ozawa, Tadashi Dohi, Hiroyuki Okamura

Test Case Prioritization Based on Method Call Sequences

Jianlei Chi, Yu Qu, Qinghua Zheng, Zijiang Yang, Wuxia Jin, Di Cui, Ting Liu

DSAT: Data Sciences, Analytics & Technologies**Session 5****Location: Meeting Hall 4****Session Chair: Maria Lee, Shih Chien University, Taiwan***A Deep Learning Based Approach Based on Stacked Denoising Autoencoders for Protein Function Prediction*

Lester James Miranda, Jinglu Hu

Faster Deep Q-learning Using Neural Episodic Control

Daichi Nishio, Satoshi Yamane

Automated Dental Image Analysis by Deep Learning on Small Dataset

Jie Yang, Yuchen Xie, Lin Liu, Bin Xia, Zhangqiang Cao, Chuanbin Guo

A Service-oriented Approach to Modeling and Reusing Event Correlations

Meiling Zhu, Chen Liu, Yanbo Han

MOWU: Mobile, Wearable & Ubiquitous Computing**Session 1****Location: Meeting 102****Session Chair: Morris Chang, University of South Florida, USA***Delivery Route Optimization through Occupancy Prediction from Electricity Usage*

Shimpei Ohsugi, Noboru Koshizuka

CARMUS: Towards a General Framework for Continuous Activity Recognition with Missing Values on Smartphones

Tianheng Wu, Liang Wang, Zhiwen Zheng, Simeng Wu, Jun Ma, Xianping Tao, Jian Lu

A Study and Estimation a Lost Person Behavior in Crowded Areas Using Accelerometer Data from Smartphones

Mohammed Balfas, Sheikh Iqbal Ahamed, Chandana Tamma, Muhammad Arif, Ahmed J. Kattan, William Chu

NCIW: Networks, Communications, Internet & Web Technologies**Session 1****Location: Meeting 103****Session Chair: Motonori Nakamura, National Institute of Informatics, Japan***Winner Determination in Combinatorial Double Auctions based on Differential Evolution Algorithms*

Fu-Shiung Hsieh, Yi-Hong Guo

A Low-cost, High-efficiency SDN Framework to Diminish Redundant ARP and IGMP Traffics in Large-scale LANs

You-Chiun Wang, Han Hu

A Flow-grained End-to-End Delay Analysis for RC Traffic in TTEthernet
Ling Guo, Xi Li, Bo Wan, Changlong Li, Kaiqi Zhou

Student Research Symposium

Session 1

Location: Meeting 202

Session Chair: Toyokazu Akiyama, Kyoto Sangyo University, Japan

Analysis of the Relationship Between Server Location and RTT

Hyunsu Mun, Jeasung Na, Hanul Park, Seungtae Kim, Youngseok Lee, John Springer

A Secure Sharing System for Cloud Desktop Applications Migrating with Optimized User Experience

Yoshinori Kamori, Kenta Hayashi, Kaori Maeda, Tohru Kondo, Reiji Aibara

A Tuning Method of a Monitoring System for Network Forensics in Cloud Environment
Shintaro Ishihara, Toyokazu Akiyama

Alternating Primary Subflow in MPTCP by External Program without Kernel Modification

Reido Horigome, Nariyoshi Yamai, Naoya Kitagawa, Satoshi Ohzahata

A Study on Sparse-modeling Based Approach for Betweenness Centrality Estimation
Ryotaro Matsuo, Ryo Nakamura, Hiroyuki Ohsaki

Model Checking of Embedded Systems Using RTCTL while Generating Timed Kripke Structure

Yajun Wu, Satoshi Yamane

CELT: Computing Education & Learning Technologies

Session 1

Location: Meeting 203

Session Chair: Henry Chan, The Hong Kong Polytechnic University, Hong Kong

Improving the Effectiveness of SQL Learning Practice: A Data-driven Approach

Luca Cagliero, Luigi De Russis, Laura Farinetti, Teodoro Montanaro

Computational Thinking: Learning by Doing with the Cinco Adventure Game Tool

Frederik Gossen, Dennis Kühn, Tiziana Margaria, Anna-Lena Lamprecht

Towards Adaptive Systems for Automatic Formative Assessment in Virtual Learning Communities

Michele Fioravera, Marina Marchisio, Sergio Rabellino, Luigi Di Caro

12:30 – 1:30pm

Lunch Break

1:30 – 3:00pm

Conference Symposia Sessions

SETA: Software Engineering Technologies & Applications

Session 12: Modeling

Location: Meeting Hall 1

Session Chair: Huiqun Yu, East China University of Science & Technology, China

Model Checking of Embedded Systems Using RTCTL While Generating Timed Kripke Structure

Yajun Wu, Satoshi Yamane

Model Checking Coordination of CPS Using Timed Automata

Kaiqiang Jiang, Chunlin Guan, Jiahui Wang, Dehui Du

Towards Modeling Cyber-Physical Systems with SysML/MARTE/pCCSL

Ping Huang, Kaiqiang Jiang, Chunlin Guan, Dehui Du

Modeling and Verifying MooseFS in CSP

Yucheng Fang, Huibiao Zhu, Gang Lu, Lili Xiao, Wanling Xie

SETA: Software Engineering Technologies & Applications

Session 13: Software Analysis

Location: Meeting Hall 2

Session Chair: Xiaodong Liu, Edinburgh Napier University, UK

PERDICE: Towards Discovering Software Inefficiencies Leading to Cache Misses and Branch Mispredictions

Ting Chen, Wanyu Huang, Muhui Jiang, Xiapu Luo, Lei Xue, Ying Wang, Xiaosong Zhang

Structural Function Based Code Clone Detection Using a New Hybrid Technique

He Jiang, Yanming Yang, Xin Chen, Zhilei Ren

A Structural Analysis Method of OSS Development Community Evolution Based on a Semantic Graph Model

Seiya Kato, Yota Inagaki, Mikio Aoyama

SETA: Software Engineering Technologies & Applications

Session 14: Program Analysis

Location: Meeting Hall 3

Session Chair: Jun Ma, Nanjing University, China

Effective Discrete Memetic Algorithms for Covering Array Generation

Xu Guo, Xiaoyu Song, Jiantao Zhou

Loop Invariant Generation for Non-Monotone Loop Structures

Chunyan Hou, Jingsong Wang, Chen Chen, Kai Shi

On the Selection of Strength for Fixed-strength Interaction Coverage Based Prioritization

Rubing Huang, Weiwen Zong, Tsong Yueh Chen, Dave Towey, Jinfu Chen, Yunan Zhou, Weifeng Sun

DSAT: Data Sciences, Analytics & Technologies**Session 6****Location: Meeting Hall 4****Session Chair: Kathy Grise, IEEE***Elucidating Which Pairwise Mutations Affect Protein Stability: An Exhaustive Big Data Approach*

Nicholas Majeski, Filip Jagodzinski

DLCencDec: A Fully Character-level Encoder-Decoder Model for Neural Responding Conversation

Sixing Wu, Ying Li, Xinyuan Zhang, Zhonghai Wu

BDViewer – A Web-based Big Data Processing and Visualization Tool

Yan Li, Junming Ma, Bo An, Donggang Cao

Optimising Toward Completed Videos in an Online Video Advertising Exchange

Douglas McIlwraith, Andrea Catalucci, Sam Boyd, Raouf Aghrout, Yi-ke Guo

Student Research Symposium**Session 2****Location: Meeting 202****Session Chair: Toyokazu Akiyama, Kyoto Sangyo University, Japan***A Study on Emulating Automotive IP Network with Network Virtualization*

Ryuichiro Maegawa, Ryo Nakamura, Yasuhiro Yamasaki, Hiroyuki Ohsaki

A Study on Comparative Analysis of End-to-End Routing and Opportunistic Routing

Chuta Minamiguchi, Natsuko Kawabata, Ryo Nakamura, Hiroyuki Ohsaki

Building a CFG to Include Exceptions

Seong-Kyun Mok, Eun-Sun Cho

A Study on Robustness of Complex Networks against Random Node Removals

Kazuyuki Yamashita, Ryo Nakamura, Hiroyuki Ohsaki

A Study on the Impact of Delayed Packet Forwarding in Content-centric Networking

Yuichi Yasuda, Ryo Nakamura, Hiroyuki Ohsaki

Toward Firmware Type Analysis Using Machine Learning Techniques

Seoksu Lee, Eun-Sun Cho

CELT: Computing Education & Learning Technologies**Session 2****Location: Meeting 203****Session Chair: Tiziana Margaria, University of Limerick and Lero, Ireland***Improving Blended Learning Outcomes Through Academic Social Media*

Han Wan, Kangxu Liu, Qiaoye Yu, Jin Ding, Xiaopeng Gao

A Model of Formative Automatic Assessment and Interactive Feedback for STEM

Alice Barana, Alberto Conte, Michele Fioravera, Marina Marchisio, Sergio Rabellino

Web-based Learning Object Search Engine Solution Together with Data Visualization: The Case of MERLOT II

W.K.T.M. Gunarathne, Timothy K. Shih, Chalothon Chootong, Worapot Sommoool, Yi-Cheng Chen, Ankhtuya Ochirbat, Sorel Reisman

Technology-enhanced Self-regulated Learning: Assessment Support Through an Evaluation Centre

Iris Braun, Tenshi Hara, Felix Kapp, Lucas Braeschke, Alexander Schill

MOWU: Mobile, Wearable & Ubiquitous Computing**Session 2****Location: Meeting 102****Session Chair: Xuebin Ma, Inner Mongolian University, Mongolia***Building a Tailored Text Messaging System for Smoking Cessation in Native American Populations*

Drew Williams, Golam Mushih Tanimul Ahsan, Ivor Addo, Sheikh Iqbal Ahamed, Daniel Petereit, Linda Burhansstipanov, Linda U. Krebs, Mark Dignan

A Culturally Tailored Intervention System for Cancer Survivors to Motivate Physical Activity

Golam Mushih Tanimul Ahsan, Jannatul Ferdouse Tumpa, Riddhiman Adib, Sheikh Iqbal Ahamed, Daniel Petereit, Linda Burhansstipanov, Linda U. Krebs, Mark Dignan

mmCNN: A Novel Method for Large Convolutional Neural Network on Memory-limited Devices

Shijie Li, Yong Dou, Jinwei Xu, Qiang Wang, Xin Niu

NCIW: Networks, Communications, Internet & Web Technologies**Session 2****Location: Meeting 103****Session Chair: Satoshi Ohzahata, The University of Electro-Communications, Japan***An Efficient Retrograde Storage for Self-destructing Messages on Frequently Colliding Hash Table*

Yan Zhu, Shuai Yang, Guohua Gan, Xiao He

A Solution for Minimum Link Flow Problem with Sparse Modeling

Ryotaro Matsuo, Ryo Nakamura, Hiroyuki Ohsaki

DTN-Knca: A High Throughput Routing Based on Contact Pattern Detection in DTNs

Weitao Wang, Yuebin Bai, Peng Feng, Yuhao Gu, Shuai Liu, Wenhao Jiang, Jun Huang

A Multihop Broadcast Mechanism for Emergency Messages Dissemination in VANETs

Sizheng Li, Chuanhe Huang

3:00 – 3:30pm **Break**
3:30 – 5:00pm **Plenary Session**

Plenary Panel: *The Future of Computing*

Location: Hitotsubashi Hall

Moderator/Session Chair: Stephen S. Yau, Arizona State University, USA

Panelists: Sheikh Iqbal Ahamed, Marquette University, USA

Jiannon Cao, Hong Kong Polytechnic University, Hong Kong

Jianhua Ma, Hosei University, Japan

Bhavani Thuraisingham, University of Texas at Dallas, USA

5:00 – 6:00pm **Plenary Session**

COMPSAC 2019 Planning Meeting (all invited)

Location: Hitotsubashi Hall

Session Chair: Sorel Reisman and Sheikh Iqbal Ahamed, COMPSAC Standing Committee Chair and Vice Chair

Friday July 27

9:30 – 11:00am **Workshop Sessions**

BIOT: The 5th IEEE International Workshop on Big Data Management and Infrastructure for the Internet of Things

Session 1: IoT Platform & Use Cases

Location: Meeting Hall 1

Session Chair: Susumu Takeuchi, NTT Corporation, Japan

Exploratory Study for Data Visualization in Internet of Things

Mohamad Yuzrie Khalid, Patrick Hang Hui Then, Valliapan Raman

Real-time data-intensive Telematics Functionalities at the Extreme Edge of the Network: Experience with the PrEstoCloud Project

Salman Taherizadeh, Blaz Novak, Marija Komatar, Marko Grobelnik

Secure IoT Agent Platform with m-cloud Distributed Statistical Computation Mechanism

Ikuo Nakagawa, Shinji Shimojo

An Accurate Model for Hurricane Trajectory Prediction

Taylor Cox, Calvin S.H. Hoi, Carson Leung, Caden Marofke

SDIM: The 1st IEEE International Workshop on Secure Digital Identity Management

Session 1

Location: Meeting Hall 2

Session Chair: Hideaki Goto, Tohoku University, Japan

[Invited Paper] *Secure and Long-lived Wireless Sensor Network for Data Center Monitoring*

Toyokazu Akiyama, Morito Matsuoka, Kazuhiro Matsuda, Yumi Sakemi, Hisashi Kojima

Towards an Operable Evaluation System for Evidence of Identity
 Øyvind Toftegaard, Bian Yang

EACIS: The 1st IEEE International Workshop on Emotion and Affective Computing Interfaces and Systems

Session 1

Location: Meeting Hall 3

Session Chair: Yoshito Tobe, Aoyama Gakuin University, Japan

Human Emotional State Analysis during Driving Simulation Experiment using Bio-Emotion Estimation Method

Midori Sugaya, Issei Watanabe, Reiji Yoshida, Feng Chen

Differences of Passenger Unease Emotional Areas, An Experimental Case Study
 Nahoko Takada, Shinji Nakagawa

Preliminary Reaction Analysis of Audience with Bio-emotion Estimation Method
 Takuya Hiramatsu, Reiji Yoshida, Feng Chen, Midori Sugaya

INFOFLOW: The 1st IEEE International Workshop on Flow Oriented Approaches in Internet of Things and Cyber-Physical Systems

Session 1: Building Inflow Environment

Location: Meeting Hall 4

Session Chair: Hirozumi Yamaguchi, Osaka University, Japan

Invited Talk: Information Flow of Things: Framework for Realizing Regional IoT Services through In-Situ Data Processing

Keiichi Yasumoto (Nara Institute of Science and Technology, Japan)

Access Control Model for IoT Environment Including Automated Configuration
 Kenta Yokogi, Naoya Kitagawa and Nariyoshi Yamai

Near Cloud: Low-Cost Low-Power Cloud Implementation for Rural Area Connectivity and Data Processing

Jose Paolo Talusan, Yugo Nakamura, Teruhiro Mizumoto and Keiichi Yasumoto

NETSAP: The 8th IEEE International Workshop on Network Technologies for Security, Administration, and Protection

Session 1

Location: Meeting 101

Session Chair: Yoshiaki Hori, Saga University, Japan

A Malware Beacon of Botnet by Local Periodic Communication Behavior
 Yi-Ren Yeh, Ming-Kung Sun, C.-Y. Huang

Detecting Emerging Large-Scale Vulnerability Scanning Activities by Correlating Low-Interaction Honeypots with Darknet

Ryoh Akiyoshi, Daisuke Kotani, Yasuo Okabe

Lightweight Classification of IoT Malware Based on Image Recognition

Jiawei Su, Danilo Vasconcellos Vargas, Sanjiva Prasad, Daniele Sgandurra, Yaokai Feng, Kouichi Sakurai

SAPSE: The 10th IEEE International Workshop on Security Aspects in Processes and Services Engineering

Session 1

Location: Meeting 102

Session Chair: Stelvio Cimato, Università Degli Studi di Milano, Italy

A New Paradigm to Address Threats for Virtualized Services

Stefan Covaci, Matteo Repetto, Fulvio Risso

Detecting Web Spams Using Evidence Theory

Moitrayee Chatterjee, Akbar Siami Namin

LloPY: A Legal Compliant Ontology to Preserve Privacy for the Internet of Things

Faiza Loukil, Chirine Ghedira-Guegan, Khouloud Boukadi, Aicha Nabila Benharkat

Evaluation of the Effectiveness of Risk Assessment and Security Fatigue Visualization Model for Internal E-crime

Takashi Hatashima, Keita Nagai, Asami Kishi, Hikaru Uekusa, Shigeaki Tanimoto, Atushi Kanai, Hitoshi Fuji, Kazuhiko Ohkubo

QUORS: The 12th IEEE International Workshop on Quality Oriented Reuse of Software

Session 1

Location: Meeting 103

Session Chair: Xiaodong Liu, Edinburgh Napier University, UK

SUCCEED: Support Mechanism for Creating and Executing Workflows for Decoupled SAS in IoT

Belmondo Aragão Jr, Rossana Andrade, Marcio Maia, Tales Nogueira

Towards Modelling and Reasoning about Uncertain Data of Sensor Measurements for Decision Support in Smart Spaces

Oluwaseun Bamgboye, Xiaodong Liu, Peter Cruickshank

Utilising Abstraction Techniques and Gaming Theory for Developing Intangible Cultural Heritage

Sicong Ma, Hongji Yang, Meiyu Shi

Evaluating How Cyclomatic Complexity Changes in the Context of Software Evolution

Huihui Li, Xufang Gong, Li Liao, Bixin Li

SIS-SS: The 2nd IEEE International Workshop on Smart IoT Sensors and Social Systems for eHealth and Well-being Applications

Session 1

Location: Meeting 203

Session Chair: Luca Vollero, Università Campus Bio-Medico di Roma, Italy

A Comparison Study on Dynamic Duty Cycle and Dynamic Channel Polling Approaches for Wireless Sensor Networks

Shama Siddiqui, Anwar Khan, Sayeed Ghani

New RSSI-based LoRa localization Algorithms for Very Noisy Outdoor Environment

Ka-Ho Lam, Chi-Chung Cheung, Wah-Ching Lee

A Smart Sensor Architecture for eHealth Applications

Ermanno Cordelli, Giorgio Pennazza, Marco Sabatini, Marco Santonico, Luca Vollero

11:00 – 11:30am

Break

11:30 – 1:00pm

Workshop Sessions

BIOT: The 5th IEEE International Workshop on Big Data Management and Infrastructure for the Internet of Things

Session 2: IoT Data Utilization

Location: Meeting Hall 1

Session Chair: Hideya Ochiai, University of Tokyo, Japan

Introducing Hierarchical Clustering with Real Time Stream Reasoning into Semantic-enabled IoT

Jingyu Sun, Masato Kamiya, Susumu Takeuchi

A New Combined CNN-RNN Model for Sector Stock Price Analysis

Ruixun Zhang, Zhaozheng Yuan, Xiuli Shao

Assisting Replace Method with Method Object: Selecting Fields and Preserving Data Access

Andrea Fornaia, Emiliano Tramontana

SDIM: The 1st IEEE International Workshop on Secure Digital Identity Management

Session 2

Location: Meeting Hall 2

Session Chair: Bian Yang, Norwegian University of Science & Technology, Norway

Texture Based Vein Biometrics for Human Identification: A Comparative Study

Khayrul Bashar, Manzur Murshed

Storage Protocol for Securing Blockchain Transparency

Ryosuke Abe, Hiroki Watanabe, Shigenori Ohashi, Shigeru Fujimura, Atsushi Nakadaira

Sora Identity: Secure, Digital Identity on the Blockchain
Makoto Takemiya, Bohdan Vanieiev

EACIS: The 1st IEEE International Workshop on Emotion and Affective Computing Interfaces and Systems
Session 2

Location: Meeting Hall 3

Session Chair: Midori Sugaya, Shibaura Institute of Technology, Japan

Influence of Hedonic State Visualization on Self and Surroundings
Guillaume Lopez, Hiroko Tobase, Naoya Isoyama

An Experiment of Human Feeling for Hospitality Robot Measured with Biological Information
Yuki Nishida, Reiichi Yoshida, Yuya Takahashi, Midori Sugaya

INFOFLOW: The 1st IEEE International Workshop on Flow Oriented Approaches in Internet of Things and Cyber-Physical Systems

Session 2: Data Processing on Infoflow Platform

Location: Meeting Hall 4

Session Chair: Keiichi Yasumoto, Nara Institute of Science & Technology, Japan

A Social Sensor Visualization System for a Platform to Generate and Share Social Sensor Data
Zennosuke Aiko, Keisuke Nakashima, Tomoki Yoshihisa and Takahiro Hara

Proposal of Automatic GPU Offloading Technology on Open IoT Environment
Yoji Yamato, Tatsuya Demizu, Hirofumi Noguchi and Misao Kataoka

Low-cost Pedestrian Counter Using Wi-Fi APs for Smart Building Applications
Satomi Kura, Yoh Shiraishi and Hirozumi Yamaguchi

Dynamic Public Key Certificates for IoT and WSN scenarios
HungYu Chien

NETSAP: The 8th IEEE International Workshop on Network Technologies for Security, Administration, and Protection
Session 2

Location: Meeting 101

Session Chair: Yoshiaki Hori, Saga University, Japan

Towards a Packet Traffic Genome Project as a Method for Realtime Sub-Flow Traffic Analysis
Marat Zhanikeev

PDL: An Efficient Prediction-based False Data Injection Attack Detection and Location in Smart Grid
Wanjiao Shi, Yufeng Wang, Qun Jin, Jianhua Ma

Formal Verification and Improvement of the PKMv3 Protocol Using CSP
Jinpeng Jiang, Hongyan Mao, Rumeng Shao, Yuanmin Xu

SAPSE: The 10th IEEE International Workshop on Security Aspects in Processes and Services Engineering
Session 2

Location: Meeting 102

Session Chair: Stelvio Cimato, Università Degli Studi di Milano, Italy

Understanding the Origins of Weak Cryptographic Algorithms Used for Signing Android Apps
Kanae Yoshida, Hironori Imai, Nana Serizawa, Tatsuya Mori, Akira Kanaoka

Experience Report: How to Extract Security Protocols' Specifications from C Libraries
Itzel Vazquez Sandoval, Gabriele Lenzini

Big Data Workshop

Location: Meeting 202

Session Chair: Kenichi Yoshida, University of Tsukuba, Japan

An Efficient Approach to Forecasting Monthly Calls for Repair from Gas Consumers
Huqun Yu, Cunbin Deng, Guisheng Fan, Liqiong Chen, Huaiying Sun

A Cooperated Data Management Platform for Coronary Heart Disease Early Identification and Risk Warning Research
Peili Yang, Hui Zhao, Jimin Liang, Xuezhen Yin, Jian Ye, Lingfeng Yang

IEESD: The 8th IEEE International Workshop on Industrial Experience in Embedded Design

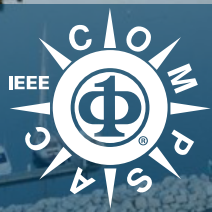
Location: Meeting 203

Session Chair: Detlef Streitferdt, Ilmenau University of Technology, Germany

Increasing Efficiency in Data Flow Oriented Model Driven Software Development for Softcore Processors
Michael Kirchhoff, Jörn Weisensee, Detlef Streitferdt, Wolfgang Fengler, Elena Rozova

State Estimation Using Neural Networks in Industrial Processes
Philipp Nenninger, Nils Bieler

Traceability in Systems Engineering: An Avionics Case Study
Nasser Mustafa, Yvan Labiche, Dave Towey



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DATA DRIVEN INTELLIGENCE FOR A SMARTER WORLD

In the era of “big data” there is an unprecedented increase in the amount of data collected in data warehouses. Extracting meaning and knowledge from these data is crucial for governments and businesses to support their strategic and tactical decision making. Furthermore, artificial intelligence (AI) and machine learning (ML) makes it possible for machines, processing large amounts of such data, to learn and execute tasks never before accomplished. Advances in big data-related technologies are increasing rapidly. For example, virtual assistants, smart cars, and smart home devices in the emerging Internet of Things world, can, we think, make our lives easier. But despite perceived benefits of these technologies/methodologies, there are many challenges ahead. What will be the social, cultural, and economic challenges arising from these developments? What are the technical issues related, for example, to the privacy and security of data used by AI/ML systems? How might humans interact with, rely on, or even trust AI predictions or decisions emanating from these technologies? How can we prevent such data-driven intelligence from being used to make malicious decisions?

Authors are invited to submit original, unpublished research work, as well as industrial practice reports. Simultaneous submission to other publication venues is not permitted. All submissions must adhere to IEEE Publishing Policies, and all will be vetted through the IEEE CrossCheck portal.

IMPORTANT DATES

October 1, 2018: Workshop proposals due
October 30, 2018: Workshop proposal notifications
January 21, 2019: Abstracts and full papers due
April 7, 2019: Paper notifications
April 15, 2019: Workshop papers due
May 1, 2019: Workshop paper notifications
May 17, 2019 – Camera ready submissions and
advance author registration due

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