Proceedings

2018 IEEE/ACM International Conference on Connected Health: Applications, Systems and Engineering Technologies

CHASE 2018

26 – 28 September 2018
Washington, DC

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Shibo Zhang (Northwestern University), Dzung Nguyen (Northwestern
University), Gan Zhang (Northwestern University), Runsheng Xu
(Northwestern University), Nikolaos Maglaveras (Northwestern
University), and Nabil Alshurafa (Northwestern University)

Adam Yee (TJSST), Frank Meng (Xyken, LLC), Steven Yi (Xyken, LLC), and
John Harmon (Johns Hopkins Medical School)

Wadduwage Don Malaka Buddhimal Shanthakumara (Sri Lanka Institute of
Information Technology) and Kahandawa Arachchige Dona Chathurangika
Padmakumari Kahandawaarachchi (Sri Lanka Institute of Information
Technology)

Amleset Kelati (KTH Royal Institute of Technology in Stockholm) and
Hannu Tenhunen (KTH Royal Institute of Technology in Stockholm)

Shinsuke Hara (Osaka City University), Takuma Hamagami (Oki Electric
Industry Co., Ltd.), Yasutaka Kawamoto (Oki Electric Industry Co.,
Ltd.), Hiroyuki Yomo (Kansai University), Ryusuke Miyamoto (Meiji
University), Takunori Shimazaki (Soliton Systems K.K.), Hiroyuki
Okuhata (Soliton Systems K.K.), Fumie Ono (NICT), and Kenichi Takizawa
(NICT)

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Message from the General Chairs

It gives me a great pleasure to welcome you to CHASE 2018, the Third IEEE/ACM Conference on Connected Health: Applications, Systems and Engineering Technologies, being held in Washington DC area, USA from September 26 to September 28. CHASE is a premier international conference in the field of connected health. It aims at bringing together researchers worldwide working in the smart and connected health area to exchange innovative ideas and develop collaborations.

Building upon the success of its CHASE 2016 and CHASE 2017, CHASE 2018 is featured by a strong technical program containing 4 technical sessions, 2 keynote talks and one panel, and a poster/demo session, thanks to the earnest effort of the organizing committee. Particularly, we would like to thank the TPC co-chairs, Prof. E. Kevin Hall from Yale School of Medicine, Prof. Fei Wang from Weill Cornell Medicine, and Prof. Gang Zhou from College of William and Mary, and their team of TPC members, for their excellent job in providing timely and rigorous reviews. The success of SEC 2018 is impossible without the strong leadership of the steering committee, for their guidance and consistent support to SEC 2018. In addition, we have joined force with the organizers of NSF SCH (Smart and Connected Health) PI meeting to take the initial step of creating a smart health week. The PI meeting will be co-located with CHASE 2018 and shared one keynote with us on September 26, 2018.

CHASE 2018 is co-sponsored by IEEE and ACM via the Technical Committee on the Internet (TCI) of IEEE Computer Society and SIGBED of ACM. SEC 2018 has received generous financial support from US National Science Foundation and ELSEVIER.

On behalf of the organizing committee we again welcome you to Washington DC area and hope that you enjoy the beautiful September of the nation's capital and are rewarded by the technical challenges of CHASE 2018.

Weisong Shi, *Wayne State University*
Anwar Walid, *Nokia Bell Labs*
General Co-Chairs
IEEE/ACM CHASE 2018

Message from the Workshop Chair

It is our great pleasure to welcome you to the workshops at CHASE 2018 in Washington DC, USA, on 28th September 2018. The main purpose of these workshops is to bring together researchers and practitioners in the field of connected and smart health to promote sharing of new ideas, experiences and information, and to develop new and cross-disciplinary collaborations.

We have six workshops planned at CHASE 2018 and they are eventually merged into three. BIGDATA4HEALTH 2018, the third International Workshop on Big Data Analytics for Smart and Connected Health, focuses on bringing together researchers and practitioners in mobile computing, biomedical and machine learning to showcase the progress, algorithms, and applications of analyzing and extracting knowledge from large-scale datasets for smart and connected healthcare; DL-EDGE-IOT 2018, the first International Workshop on Deep Learning and Edge Computing in IOT-centered Health Applications, compasses a wide array of techniques, methods, architectures and solutions in low-resource machine learning, model-compressed deep learning, secure, private and efficient fog computing for practical IoT use cases; MedSPT 2018, the third International Workshop on Security, Privacy, and Trustworthiness in Medical Cyber-Physical Systems, aims to promote discussions of research and relevant activities in the design of secure, privacy, or trustworthiness architectures, protocols, algorithms, services, and applications on medical cyber physical systems.

These workshops would not be possible without the hard work of a number of people involved in the organization, including Houbing Song, Roozbeh Jafari, Yuan Zhang, Dechang Chen, Chengyu Liu, Kunal Mankodiya, Harishchandra Dubey, Farshad Firouzi, Amir M. Rahmani, Utsav Drolia, Kewei Sha, Kim-Kwang Raymond Choo, Honggang Wang, Chonggang Wang, Shucheng Yu, Kashif Saleem, Youssef Iraqi, Amjad Gawanmeh, Tanveer Zia and Joel J.P.C. Rodrigues. In particular, we would like to thank the CHASE 2018 conference general chairs Weisong Shi and Anwar Walid, and program chairs E. Kevin Hall, Fei Wang and Gang Zhou, for their great support and excellent organization of the overall conference and workshops program.

Finally, we would like to thank all of the authors who submitted their work to CHASE 2018 workshops. Without them these workshops would not be possible. We wish you interesting and exciting workshops and an enjoyable stay in Washington DC.

Song Han, *University of Connecticut*
Workshop Chair
IEEE/ACM CHASE 2018

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