Call for Papers: EDA/CAD in the IoT eHealth Era: From Devices to Architectures, Applications, and Data Analytics

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EDA/CAD in the IoT eHealth Era: From Devices to Architectures, Applications, and Data Analytics
Co-organized with ACM/IEEE ICCAD, November 16, 2017, Irvine, CA, USA

The interaction between technology and healthcare has a long history. Recent years have seen rapid growth in the Internet of Things (IoT) paradigm, the advent of miniature wearable biosensors, and research advances in "Big Data" techniques for effective manipulation of large, multiscale, multimodal, distributed and heterogeneous data sets. These advances have generated new and exciting opportunities for personalized precision eHealth and mHealth services. IoT heralds a paradigm shift in the healthcare horizon by providing many advantages, including availability and accessibility, ability to personalize and tailor content, and cost-effective delivery. Although IoT eHealth has vastly expanded the possibilities to fulfill a number of existing healthcare needs, many challenges must still be addressed in order to develop consistent, suitable, safe, flexible and power-efficient systems that are suitable for medical needs. To enable this transformation, it is necessary for technological advancements in both hardware and software, and for these communities to work together. Breakthroughs in areas ranging from bioelectronics to communication devices, software and networking, pattern recognition, data-analytics, Big Data, and cloud computing are needed to enable next-generation sensing, control, and computing, and to realize the IoT vision for smarter healthcare. This workshop will address all these important aspects of novel IoT eHealth technologies. It will encompass smart healthcare-wearable sensors, body area sensors, advanced pervasive healthcare systems, and Big Data analytics. Then workshop will identifying new perspectives, and highlight compelling research issues and challenges such as scalability, interoperability, device-network-human interfaces, and security, with various case studies. In addition, through this workshop, we will show how knowledge from CAD areas such as large-scale analysis and optimization techniques can be applied to the important problems of eHealth. This workshop will include an impressive lineup of internationally recognized experts for invited presentations.

The workshop organizers highly encourage the submission of early results (abstract) in the following topics. The Technical Program Committee will evaluate the submissions, and the author(s) of the accepted submissions are expected to present the results in the format of posters and few-minutes introductory presentations at the workshop. Proceedings of the workshop are limited to the ICCAD attendees.

- EDA for IoT-aware medical and healthcare applications
- Nano-CMOS and Post-CMOS based sensors, circuits, and controller
- Novel devices and circuits, and architectural support for healthcare-aware IoT
- Accelerators for IoT eHealth (e.g., learning, neuromorphic and cognitive computing)
- Secure middleware for eHealth and IoT
- Reprogrammable and reconfigurable embedded systems for eHealth
- Big-data analytics, machine learning algorithms and scalable/parallel/distributed algorithms in IoT eHealth Era
- Brain-inspired and neuromorphic components, circuits, and systems for IoT eHealth
- Fog computing/Edge clouds for health care cloud resource allocation and monitoring
- Privacy preserving and security approaches for IoT eHealth
- Fault tolerance, reliability and scalability
- Case studies of smart eHealth architectures (telemedicine applications, health management applications, etc.)

Co-chairs: Farshad Firouzi, Krishnendu Chakrabarty, and Sani Nassif

Program Committee:
Majid Sarrafzadeh, University of California, Los Angeles
Bahar Farahani, University of Tehran
Tsung-Yi Ho, National Tsing Hua University
Kunal Mankodiya, University of Rhode Island

Invited Talks:
Ken Shepard, Professor of Electrical Engineering, Columbia University
Majid Sarafzadeh, Professor of Computer Science, University of California, Los Angeles Lou Scheffer, Principal Scientist at the Howard Hughes Medical Institute
Brian Otis, Fellow at Google
Natasha Balac, Director, Interdisciplinary Center for Data Science, UCSD

Demo/Poster Session:
Two pages maximum in US Letter or A4 format.
For submission, please email your work to: **Farshad.Firouzi@msg.group**
Important Dates:
Submission: **September 15, 2017**
Acceptance: October 1, 2017