IEEE Design&Test

Call for Contributions to Special Issue on

Design and Management of Mobile Platforms: From Smartphones to Wearable Devices

Aim and Scope

There are more than five million unique applications that run on more than a billion smartphones as of 2019. These numbers are expected to continue growing with the technological advancements in mobile computing, smaller form-factor wearable computers, and internet-of-things. While form factors and specific system requirements vary, mobiles platforms share common design goals which include energy-efficiency, competitive performance, battery life, and reliability. Competitive performance requires higher operating frequency, and leads to larger power consumption. In turn, power consumption increases the junction and skin temperatures, which have adverse effects on the device reliability and user experience.

Highly heterogeneous systems-on-chips (SoC) are required to achieve the performance requirements under tight power consumption, energy, and cost considerations. The design of these platforms remains challenging. Moreover, application development, let alone aggressive optimization, is known to be notoriously difficult and time consuming when utilizing highly specialized accelerators. The optimization problem is exacerbated by dynamic variations of application workloads and operating conditions. As a result, there is also a need for software- and hardware-based adaptive power and performance management approaches that consider the platform as a whole, rather than focusing on a subset.

This special issue calls for papers that address the design and dynamic management of mobile platforms ranging from low-power wearable devices to powerful multicore smartphones.

Topics of Interest

The special issues will cover recent advances and the following research paper targeting specifically mobile and wearable platforms:

- Heterogeneous SoC architecture design
- Dynamic thermal & power management
- Power, performance and temperature modeling
- Online learning for adaptive system design
- Energy harvesting and management
- DNN/neuromorphic architectures for mobile and wearable devices
- Case studies of mobile and wearable applications

Please send your questions about the scope to the guest editors.

Submission Guidelines

Prospective authors should follow the submission guidelines for IEEE Design & Test. All manuscripts must be submitted electronically to IEEE Manuscript Central at https://mc.manuscriptcentral.com/dandt

A specific special issue category will be available and selectable from a menu. All articles will undergo the standard IEEE Design & Test review process. Submitted manuscripts must not have been previously published or currently submitted for publication elsewhere.

Manuscripts must not exceed 5,000 words, including figures (with each average-size figure counting as 200 words) and a maximum of 12 references (50 for surveys). This amounts to about 4,000 words of text and a maximum of five small to medium figures. Accepted articles will be edited for clarity, structure, conciseness, grammar, passive to active voice, logical organization, readability, and adherence to style. Please see IEEE Design & Test Author Resources at http://ieee-ceda.org/publication/ieee-design-test-dt/paper-submission-instructions for links to Submission Guidelines Basics and Electronic Submission Guidelines and requirements.

Schedule:

- Initial Submission Deadline: July 31, 2019
- Notification First Round: September 30, 2019
- Revision Submission: October 20, 2019
- Final Notification: November 20, 2019
- Final Version Due: December 20, 2019

Guest Editors:

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