IEEE SIGNAL PROCESSING MAGAZINE

Special Issue on Signal Processing for Internet-of-Things

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The notion of "Internet of Things" has emerged as a last-mile solution for connecting various cyber technologies to our everyday life. It envisions a three-tier architecture that highly distributed and heterogeneous sensor data will be collected through a gateway and be made available to the Internet, and be readily accessible to a wide range of applications. Today, with an ever-increasing number and type of Internet-of-Thing devices, as well as the increasing demands being placed on the end user, sensing platform, and computing and storage infrastructure, more is being asked of engineers, designers, and scientists. Signal processing is playing an increasingly substantial role in this domain, including such general topics as analyzing, summarizing, and protecting signals and information exchanged or shared by connected things. The diversity of these problems requires a more collaborative effort from engineers and scientists from a diverse set of specialties – and yet, there is no one real domain for which to publish and communicate to this general community. The impact to society is massive, including such broad aspects as (i) energy efficiency and accuracy, (ii) security and privacy considerations, (iii) big data application. How will signal processing advance today's autonomous networked sensor/device into inter-connected ones in an energy efficient, secure and privacy-preserving manner? How to leverage today's pervasive cloud and network infrastructure to foster more intriguing applications with more demanding signal processing, machine learning techniques? There are clearly new and emerging challenges that need to be addressed.

This special issue invites well thought-out tutorial-style surveys and overviews of recent research and development in Internet-of-Things, covering their infrastructure support and applications including edging and cloud computing, wireless networking, mobile computing, ubiquitous sensing, machine learning, security, and automotive navigation. As such, this special issue aims to cover a wide variety of aspects with a focus of the enabling and synergistic roles that signal processing plays. The scope of this special issue is interdisciplinary and seeks collaborative contributions from academia and industrial experts in the areas of computer system, wireless networking, embedded system, signal processing, security, and machine learning/data mining.

Topics of Interest include (but are not limited to):

- Energy efficient algorithm design
- Video and audio analytics associated with the IoT platform
- Machine learning, data mining and big IoT data analytics
- Mobility and network connectivity in IoT applications
- Wireless and mobile technologies in IoT connectivity
- Security and privacy for IoT applications and systems
- Cloud (internet, edge) support for IoT applications
- Multi-sensor fusion IoT applications
- Human factors and cognitive science in IoT
- Autonomous, semi-autonomous and IoT control
- DSP technologies in IoT
- IoTs in healthcare and other novel applications

White papers are required, and full articles are invited based on the review of white papers. Articles submitted to this issue must be of tutorial and overview/survey nature and in accessible style to a broad audience, and contain significant relevance to the signal processing and its use in Internet-of-Things (authors of original research articles should submit instead to the appropriate journals or transactions). Submissions will be reviewed according to the IEEE Signal Processing Magazine guidelines, and should not have been published or under review elsewhere. Submissions should be made online at http://mc.manuscriptcentral.com/sps-ieee. For guidelines and information on paper submissions, visit http://signalprocessingsociety.org/publications-resources/ieee-signal-processing-magazine .

Important Dates: Expected publication date for the special issue is September 2018**.**

White paper due	31 October 2017
Notification of white paper review	15 November 2017
Submission of invited full-articles	5 January 2018

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