Title:

Green and low power Internet of Things

Abstract:

As a potential way to dramatically change how human beings work and live, the Internet of Things (IoT) aims to connect everything (e.g., people, network, consumer electronics, machines) from the physical world to cyber world and allow everything interact with each other (e.g., smart transportation, smart grid, smart cities, etc.). Since the advantages of IoT, it is attracting tremendous attention from the academia, industry and government. As a crucial challenge for IoT, the greenness and low-power consumption should be carefully addressed. Specifically, various things (e.g., sensor devices, mobile phone terminals, cloud computing systems) in IoT are consuming a large amount of energy. Moreover, the connection of things (e.g., RFID network, WSN, GPS network, 5G network) in IoT is with substantial energy consumption. Finally, the interaction of things (e.g., data sensing, data communications, data computing) in IoT needs a lot of energy. In particular, with the prevalence of mobile devices, electronic devices, cameras, social networks, social media, etc., our daily word is generating big data and multimedia big data, which further aggregate the energy demand in terms of the data transmission of IoT.

Scope and Topics:

Therefore, the aim of this workshop is to solicit original papers with novel contributions on the greenness of IoT, from the perspective of energy efficiency. Contributions by the applications of emerging technologies (e.g., social computing, big data computing, fog computing, edge computing, emotional computing, software defined networks) to address the greenness issue of IoT are also welcome. The workshop solicits novel papers on a broad range of topics, including but not limited to:

- ✧ Energy-efficient sensing for green IoT
- ✧ Energy-efficient cloud computing for green IoT
- ✧ Energy-efficient RFID for green IoT
- ✧ Energy-efficient 5G for green IoT
- ✧ Energy-efficient communication for green IoT
- ✧ Energy-efficient data center for green IoT
- ✧ Energy-efficient cyber-physical systems for green IoT
- ✧ Social computing for green IoT
- ✧ Big data computing for green IoT
- ✧ Fog computing for green IoT
- ✧ Edge computing for green IoT
- ✧ Emotional computing for green IoT
- ✧ Software-defined networks for green IoT
- ✧ Middleware for green IoT

- ✧ energy-efficient backscatter communications
- ✧ Testbeds for green IoT
- ✧ Green wireless sensor networks architectures and communication protocols
- ✧ Data gathering, fusion, and dissemination in Green WSNs
- ✧ Multimedia over sensor networks
- ✧ Smart cities and smart environment
- ✧ Cooperative communication
- ✧ Relaying techniques
- ✧ Novel applications for green IoT

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Zheng-guo Sheng received the B.Sc. degree from University of Electronic Science and Technology of China, in 2006 and M.S. and Ph.D. degrees from Imperial College London, UK, in 2007 and 2011, respectively. He is currently a Lecturer with University of Sussex, UK. Previously, he was with UBC as a Research Associate and with Orange Labs as a Senior Researcher. He has more than 70 publications. His research interests cover IoT, vehicular communications, cloud/edge computing.

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Haijun Zhang is currently a Full Professor in University of Science and Technology Beijing, China. He was a Postdoctoral Research Fellow in Department of Electrical and Computer Engineering, the University of British Columbia (UBC), Vancouver Campus, Canada. From 2011 to 2012, he visited Centre for Telecommunications Research, King's College London, London, UK, as a Visiting Research Associate. Dr. Zhang has published more than 100 papers and authored 2 books. He serves as Editor of IEEE Transactions on Communications, IEEE 5G Tech Focus, and Journal of Network and Computer Applications, and serves/served as a Leading Guest Editor for IEEE Communications Magazine, and IEEE Transactions on Emerging Topics in Computing. He serves/served as General Co-Chair of 5GWN'17 and GameNets'16, Track Chair of ScalCom2015, Symposium Chair of GameNets'14, TPC Co-Chair of INFOCOM 2018 Workshop on Integrating Edge Computing, Caching, and Offloading in Next Generation Networks, General Co-Chair of ICC 2018 (ICC 2017, Globecom 2017) Workshop on 5G Ultra Dense Networks, and General Co-Chair of Globecom 2017 Workshop on LTE-U. He has served as a TPC member in a numerous international conferences. He received the IEEE ComSoc Young Author Best Paper Award in 2017. He is a Senior Member of IEEE.

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Jian Su received his M.S. degree from Central China Normal University in 2012, and the Ph.D. degree in Communication and Information Systems from University of Electronic Science and Technology of China in 2016. He is currently services as a lecturer in the School of Computer and Software at Nanjing University of Information Science and Technology. He has more than 20 publications. His research interests include IoT, WSN, SDN, RFID and mobile computing.

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