

Special Issue on JointCloud and Blockchain for Internet of Things

Connecting extraordinarily large number of devices to the Internet, the Internet of things (IoT) service providers always upload the massive amount of data generated by these IoT devices to the cloud in efficient, secure and economic ways. However, an IoT framework based on a single cloud suffers from weakness for supporting time-critical IoT applications, security and trust issues, etc., which impede its wide adoption. As a new generation of computing model, Joint cloud computing (a.k.a. JointCloud) is proposed to facilitate developers to customize cross-cloud services by means of “software definition” based on the integration and cooperation among cloud service entities, helping keep the data privacy and improve the service coverage. Moreover, blockchain is perceived as a promising technique to solve the security and trust issues between multi-entities. Nevertheless, there is no consensus towards any schemes or best practices that specify how JointCloud applies to IoT and how blockchain can be embedded into the JointCloud-enabled IoT framework.

This special issue invites original research that investigates JointCloud computing and blockchain technologies for IoT, for examples, key theories, innovative schemes, and significant applications of these techniques. Potential topics include but not limited to the following:

- Cross-cloud resource virtualization, management, sharing and collaboration for IoT
- Elastic scheduling and allocation of cross-cloud resources for IoT
- Reliability, availability, consistency, trust and security of joint cloud computing
- Applications of joint cloud computing for IoT
- Joint cloud computing architecture and economics for IoT
- Blockchain based IoT security solutions
- Theories of blockchain and distributed systems
- Smart contract and distributed ledger for IoT devices and data
- Distributed consensus on resource-limited IoT devices
- Blockchain schemes for decentralization in IoT
- Byzantine fault tolerance
- Security of blockchain and decentralized schemes for IoT
- Performance evaluation of blockchain and decentralized schemes for IoT
- IoT applications of joint cloud computing
- IoT applications with blockchain technique

Submissions

All original manuscripts or revisions to the IEEE IoT Journal must be submitted electronically through IEEE Manuscript Central, <http://mc.manuscriptcentral.com/iot>. Author guidelines and submission information can be found at <http://iot.ieee.org/journal>. The IEEE IoT Journal encourages authors to suggest potential reviewers as part of the submission process, which might help to expedite the review of the manuscript. Please suggest only those without conflict of interest. Each submission must be classified by appropriate keywords.

Important Dates

Submissions Deadline: June 15, 2019

Acceptance Notification: November 15, 2019

First Reviews Due: September 1, 2019

Final Manuscript Due: December 1, 2019

Revision Due: October 15, 2019

Publication Date: 2020

Guest Editors

Prof. Hao Yin (h-yin@mail.tsinghua.edu.cn), Tsinghua University, China

Prof. Huaimin Wang (whm_w@163.com), National University of Defense Technology, China

Prof. Xu Zhang (xzhang17@nju.edu.cn), Nanjing University, China

Prof. Yan Luo (yan_luo@uml.edu), University of Massachusetts Lowell, USA

Prof. Gabriel Ghinita (ghinita@usc.edu), University of Massachusetts Boston, USA