Call for Papers

Transactions on Emerging Telecommunications Technologies (ETT)
Special Issue on Flexible Cloud and Edge for Internet-of-Things

Aim and Scope:

With the Internet of Things (IoT), billions of devices will be interconnected to empower the future intelligent world and life, which is supported by upcoming and emerging technologies, such as 5G, network function virtualization, artificial intelligence. Along with the communication and computation technology evolution, it is observed that the service platform should also evolve to explore low latency and high throughput capability with the support of edge computing. That is, due to the comparatively long distance and the resulted in high latency between the centralized cloud and IoT devices, edge computing, by pushing the cloud services to the network edge, has become a promising platform to provision computation and storage resources as edge services in the proximity of the IoT devices. Thus, edge computing can well facilitate the IoT devices. While, although with lower latency, the resources on the edge computing environments are limited in comparison to cloud computing. In this case, other than treating edge computing as the alternative to cloud computing, it would be better to treat it as complementary. Cloud, edge, and IoT devices shall be systematically organized and scheduled to provide efficient and secure IoT services.

It is envisioned that there will be large number of different IoT applications with diverse needs in the near future. Meanwhile, there will be a large number of geo-distributed edge servers scattered in the proximity of the IoT devices. This raises a natural question on how the edge resources shall be managed to cater for the diverse needs of IoT applications, together with the cooperation of cloud. Targeting at this goal, there are many remaining challenges. For example, from the perspective of resource allocation and task scheduling, it is expected that the task can be freely executed on IoT device, edge servers, or the cloud. Obviously, the resources on different devices are highly heterogeneous. Efficient algorithms are expected to address such issue from different aspects. From the perspective of security and privacy, the data generated by IoT devices need to be shuffled and processed across different domains (e.g., different cloud servers, different edge servers) with different security and privacy level guarantee. How to guarantee the security and privacy of the sensitive IoT data is also a critical issue towards flexible cloud and edge empowered IoT application development.

Regarding the above challenges, we are motivated to organize such a special issue to collect the state-of-the-art concept and methodology to tackle these challenges.

Topics of Interest:

The topics relevant to this special issue include but are not limited to:

- Flexible cloud and edge architecture design for IoT
- Flexible network protocol design and management for IoT
- Optimization for cloud/edge computing, networking, and IoT applications
- Green cloud/edge empowered IoT system design
- Flexible cloud/edge storage for IoT applications
- Flexible security in cloud, edge and IoT
- Cloud network virtualization techniques
- Modeling for cloud and edge empowered IoT system
- Performance analysis for cloud and edge empowered IoT systems
- IoT data storage and sharing in the cloud and edge
- Real-time resource reporting and monitoring for cloud and edge resource management
- Cloud and edge empowered IoT forensics
- Networking for cloud and edge empowered IoT systems
- IoT data mining and diagnosis in cloud and edge computing
- Security, privacy, trust for cloud and edge empowered IoT
- Traffic engineering and congestion control for cloud and edge empowered IoT
- Data-driven flexible cloud and edge orchestration for IoT systems

Papers must be tailored to the problems of flexible cloud and edge computing, and explicitly consider catering for the diverse IoT application needs. The editors maintain the right to reject papers out of scope of this special issue. Only originally unpublished contributions and invited articles will be considered for the issue. The papers should be formatted according to the ETT guidelines:

http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1541-8251/homepage/ForAuthors.html. Authors should submit a PDF version of their complete manuscript via Manuscriptcentral (http://mc.manuscriptcentral.com/ett) according to the timetable below.

Important Dates:

Submission deadline: March 31, 2020
Author Notification: May 31, 2020
Final Manuscript: June 30, 2020

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