

Blockchain and AI enabled 5G Mobile Edge Computing

Theme: In mobile edge computing, data is captured from various industrial and manufacturing sectors and is transmitted from machine-to-machine and Internet of Things (IoT) devices through the 5G mobile networks. The powerful data mining tool namely Artificial intelligence (AI) can be used for analyzing and processing the captured data; AI attempts to achieve high quality products, enhance production robustness and reliability, increase productivity, and reduce manufacturing costs. However, the 5G mobile networks cannot be fully monitored, since the networks are engaged with numerous manufacturing sectors and the network data is transmitted through numerous network nodes. Although AI is powerful and can be engaged with mobile edge computing, misleading analysis would be generated when fraud or dishonest data is unintentionally integrated. Data reliability and honesty is a big issue on data analysis in mobile edge computing. In the field of virtual transactions, cryptocurrencies such as Bitcoin and Litecoins are used by many financial sectors. Blockchain is used to guarantee transactions security, trust and privacy without the involvement of centralized authorities or management. The blockchain attempts to reduce transaction risks and financial fraud, since the blockchain connects all transaction parties. All transactions are verified and monitored by the blockchain. In mobile edge computing, data trust and honesty between devices can be ensure when the blockchain is applied. When the trust and honesty of the data can be ensured, more reliable data mining can be performed by the AI. This special issue focus on AI methods which aim at performing better analyses, simulations, predictions, and testing in mobile edge computing of which Blockchain is integrated.

This special section will focus on (but not limited to) the following topics:

1. Blockchain and mobile edge computing in hybrid system environment
2. Distributed blockchain and mobile edge computing in on-line and off-line communications
3. Mobile edge and security and trust in 5G networks
4. 5G mobile edge computing in delay sensitive applications
5. AI based mobile computation with multi-user offloading
6. QoE (Quality of Experience) of mobile computing in 5G environment
7. End user devices and augmented capabilities in mobile edge computing and 5G environment
8. Predictive analytics and fault detection with AI in mobile edge computing
9. AI powered mobile edge computing and 5G traffic management
10. AI based big data monitoring in mobile edge computing
11. AI enabled cyber physical systems with mobile edge computing
12. AI powered multimedia recommendation systems with mobile edge computing
13. Big data analytics in mobile edge computing using AI
14. Improvement of product reliability, qualification and robustness using mobile edge computing and AI
15. Mobile edge computing with cloud intelligence
16. Distributed data acquisition and sensing through mobile edge networks
17. Blockchain provenance with mobile edge networks and AI
18. Blockchain and mobile edge computing applications such as computer aided design and manufacturing, manufacturing automation, online measurement and control for manufacturing process optimization, new product design and development, intelligent transportation applications, energy/smart grids/utilities, healthcare service systems, agricultural and farm systems, logistics and supply chains, E-education and learning, atomic swapping

Manuscript Preparation and Submission

Follow the guidelines in "Information for Authors" in the IEEE Transaction on Industrial Informatics <http://www.ieee-ies.org/pubs/transactions-on-industrial-informatics>. Please submit your manuscript in electronic form through Manuscript Central web site: <https://mc.manuscriptcentral.com/tii>. On the submitting page #1 in popup menu of manuscript type, select: SS on **Blockchain and AI enabled 5G Mobile Edge Computing**

Submissions to this Special Section must represent original material that has been neither submitted to, nor published in, any other journal. Regular manuscript length is 8 pages.

Note: The recommended papers for the section are subject to final approval by the Editor-in-Chief. Some papers may be published outside the special section, at the EIC discretion.

Timetable:

Deadline for manuscript submissions
Expected publication date (tentative)

February 28, 2019
September 2019

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