IEEE Transactions on Vehicular Technology Special Issue on Vehicular Networks in the era of 6G: End-Edge-Cloud Orchestrated Intelligence

With the extraordinary growth of the vehicle population, vehicular networks play a key role in building safe, efficient, and intelligent transport systems and has been attracting a lot of attention from both academic and industrial communities around the world. The rise of autonomous driving technology and the prosperity of mobile applications (e.g., real-time video analytics, image-aided navigation, and natural language processing) have brought tremendous pressure on current vehicular networks, e.g., high bandwidth, ultralow latency, high reliability, high security, powerful computiation capability, and massive connections. It is necessary to continue to develop vehicular networks by combining the latest research intends in other fields to meet quickly rising communication and computation demands. The upcoming 6G technology, which provides Holographic and Artificial Intelligence (AI) enabled communications, together with the increasing implementation of artificial intelligence in mobile devices, will lead to a new research trend to end-edge-cloud orchestrated computing with intelligence. It means that, not only the intelligent communication protocols, but also the intelligent computing resource management and machine learning algorithms among the mobile vehicles, the edge and the cloud, should be re-designed to support the development of vehicular networks.

This special issue aims at providing a platform for sharing the state-of-the-art research and development on intelligence-enabled end-edge-cloud orchestrated computing for vehicular networks in the era of 6G and publishing original research and peer-reviewed articles targeted to all readers of the IEEE Transactions on Vehicular Technology. The content of the special issue will focus on the architectures and implementations, communication and networking protocols, advanced machine learning and data analytical methods, performance modeling and optimization, and other enabling technologies for end-edge-cloud orchestrated intelligence. We solicit papers covering various topics of interest that include, but not limited to the following:

1. Architecture design of end-edge-cloud orchestrated vehicular networks in 6G
2. Intelligent communication and networking protocol design for vehicular networks in 6G
3. Massive data collection, transmission and storage scheme for vehicular networks in 6G
4. End-edge-cloud orchestrated machine learning and data analytical algorithms for vehicular networks in 6G
5. Intelligent end-edge-cloud orchestrated caching strategies for vehicular networks in 6G
6. Intelligent end-edge-cloud orchestrated computation resource management for vehicular networks in 6G
7. Operational optimization for end-edge-cloud orchestrated vehicular networks in 6G
8. Performance evaluation of end-edge-cloud orchestrated vehicular networks in 6G
9. Security, privacy, and trust issues of vehicular networks in 6G
10. Hardware and software design for vehicular networks in 6G
11. Implementation and testbed of vehicular networks in 6G

Guest Editors:

   Our editorial board has five members, including one Academician of Chinese Academy of Engineering and two IEEE Fellows. The editor board covers the geographic regions of China Mainland, Canada and USA. Their profiles are listed as follows.

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