Call for Papers of

IEEE Transactions on Intelligent Transportation Systems

Special Issue on

# Big Data and AI for Computational Transportation in the Cyber-Physical-Social Space

## MOTIVATION AND SCOPE

The past decades have witnessed the rise and power of big data, artificial intelligence, Internet of things (IoT), and high-performance computing techniques. These advanced techniques have great potential and capacity to enable new methodology, applications, and dramatic improvements for current Intelligent Transportation Systems (ITS). To this end, developing new concepts/methodology/tools/ algorithms/applications for future ITS with these technologies become more important and promising.

ITS is a typical class of cyber-physical-social systems, in which physical and cyber elements are tightly conjoined, coordinated, and integrated with human and social characteristics. The IoT devices can sense physical transportation systems in real time, while the social sensor network can monitor traffic state and behavior from the cyber space. The generated traffic big data in the cyber-physical-social spaces have flourished in almost all aspects of ITS, which can provide new insights and perspective on transportation systems analysis, modeling and understanding.

More and more transportation management and control tasks require sophisticated and high-performance computational methods/platforms to deal with the complexity and dynamics of traffic environments. For examples, traffic big data processing and analytics with the video and trajectory data, activity pattern mining with the cell phone data, large-scale traffic simulation and traffic signal control. The tight interaction between transportation science and engineering with the high-performance computing techniques is needed.

This special issue aims to provide a forum for researchers and practitioners in academia, industry and government to present their latest research findings and engineering experiences in developing and applying big data, AI, and high-performance computing techniques for ITS in integrated cyber, physical, and social spaces.

**LIST OF TOPICS:** We are soliciting original high-quality research papers on topics that include, but are not limited to, the following:

1. Traffic data sharing and collaborative applications
2. Traffic big data analytics and mining
3. Traffic Knowledge graph for ITS operations
4. Crowdsourcing for sensing, managing, and controlling of ITS
5. City-scale traffic simulation with high-performance computing techniques
6. Big data for ITS modeling
7. Travel behavior analysis under cyber-physical-social spaces
8. Knowledge discovery and pattern recognition from human mobility
9. Social Transportation
10. Environment and ITS
11. Parallel transportation Systems
12. Advanced machine learning and deep learning techniques for ITS
13. Ride-sharing Transportation
14. Intelligent and comprehensive control of transportation systems
15. Case studies

**PAPER SUBMISSION**

Manuscripts should be submitted at http://mc.manuscriptcentral.com/t-its.

**IMPORTANT DATES**

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| First submission deadline: | July 31, 2020 |
| Notification of first decision: | October 30, 2020 |
| First Revision submission deadline: | December 30, 2020 |
| Notification of final decision: | February 28, 2021 |
| Final manuscript (camera ready) submission deadline: | March 20, 2021 |
| Expected Publication Issue: | June, 2021 |

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