IEEE Transactions on Intelligent Transportation Systems

Call for Papers

Special Issue on “Data Science for Cooperative Intelligent Transportation Systems”

Although transportation systems are naturally represented as networks, i.e., road networks and internet of vehicles, they are loosely organized with multi-source heterogeneity. Thus, communication cooperation on the road including car-to-car and car-to-infrastructure is significant for intelligent transportation systems. Cooperative Intelligent Transport System (C-ITS) aims to improve safety, sustainability, efficiency, and comfort beyond the scope of stand-alone systems by taking advantage of the communication and cooperation between its participants. It is a key enabler for future road traffic management systems. The core components of C-ITS include vehicles, roadside units, and traffic command centers. They generate a large amount of traffic that is made up of both mobility and service-related data. Therefore, data science methodologies and applications are the key components of C-ITS. However, with the huge amount of data from transportation sensor networks, integration data science methodologies and applications present a real challenge for realizing C-ITS applications. Although some attempts have been done to explore data science for C-ITS, there exist various scientific and engineering challenges including software and hardware development, computational complexity, data multi-source heterogeneity, and privacy protection. Consequently, to fully explore the benefits of C-ITS applications like connected and autonomous vehicles, traffic control and prediction, road safety, and accident prediction, advanced data science methodologies and applications are in great need.

This special issue aims to solicit high-quality original research papers, which address major challenges for C-ITS like connected and autonomous vehicles, traffic control and prediction, road safety, and accident prediction, supported by advanced data science technologies. The expected topics of interest include, but are not limited to:

- Application of data science in C-ITS
- Machine/Deep learning models for C-ITS
- Clustering and classification algorithms for C-ITS
- Big data analytics for data processing from C-ITS
- Efficient data generation and transmission for C-ITS
- Data science based trust, fraud detection, and cybersecurity
- Data science based security and privacy solutions for C-ITS
- Data science based energy-aware traffic management solutions
- Transportation big data analytics for public transit planning and operation
- Innovative data science techniques for attacks detection and prevention in C-ITS
- Data science in C-ITS domains: safety, sustainability, efficiency, and comfort
PAPER SUBMISSION GUIDELINES

Paper submission should conform to the information for authors available at https://mc.manuscriptcentral.com/t-its.

IMPORTANT DATES

First submission deadline: June 30, 2021
Notification of first decision: September 30, 2021
First revision submission deadline: December 31, 2021
Notification of final decision: April 2022
Final manuscript (camera ready) submission deadline: May 2022
Issue of Publication: June 2022.

SUBMISSION AND REVIEW OF PAPERS

Submitted papers should be original and not be under consideration elsewhere for publication. The authors should follow the journal guidelines, regarding the manuscript content and its format when preparing their manuscripts. All papers will be reviewed by at least three independent reviewers for their suitability in terms of technical novelty, scientific rigor, scope, and relevance to this special issue.

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