

CALL FOR PAPERS

IEEE Transactions on Emerging Topics in Computational Intelligence

Special issue on trusted mobile crowdsourcing for next generation intelligent transportation systems

I. AIM AND SCOPE

The concept of Intelligent Transportation Systems (ITS) has start attracting significant attention in research and industry in recent years. Researchers are using different techniques, e.g., Mobile CrowdSourcing (MCS), to improve the performance of transportation systems. In an MCS-based system, sensor-rich mobile devices, such as smartphones, wearable devices, and smart vehicles, sense and capture data, and send it to edge/cloud servers to make timely decisions using Computational Intelligence (CI) techniques. However, there are certain issues that need to be considered. First, it is possible that some malicious users enter the system by forging the identities of data providers and forward false/fake data to the servers with intentions of misleading the ITS and causing serious damages. Second, participation in the MCS may compromise the privacy of data providers by leaking their location, trajectory, activity, and identity information. Third, CI algorithms may disclose the identity of participants by analyzing data patterns which can easily lower the willingness of participants. To address these issues, factors like trust, security, and privacy, need special attention to maintain the overall quality of service of an ITS in terms of user participation, data collection, data processing and analysis, and system protection to improve the overall performance.

The aim of this special issue is to bring together academic and industrial researchers to highlight and discuss various technical challenges to improve the performance of next generation ITS by using trusted MCS techniques based on CI techniques. This special issue will discuss how to use various frameworks, e.g., edge, fog, and cloud computing, and five main pillars of CI, i.e., fuzzy systems, neural networks, evolutionary computation, learning theory, and probabilistic methods, to deal with trust, security, and privacy issues in MCS.

II. TOPICS

The topics relevant to the special issue include (but are not limited to) the following topics:

- Role of CI for anomaly detection in crowdsensed data
- Preserving the privacy of participants in MCS using CI
- Use of CI to detect malicious nodes in MCS
- CI combined with encrypted learning in edge/fog/cloud computing architecture
- Statistical modeling and data mining using CI techniques for privacy preserved MCS data
- Resource management using CI techniques in MCS
- Secure and energy-efficient network operation based

on CI techniques

- Self-learning and adopting routing protocols based on CI for MCS
- Involvement of CI in designing intelligent edge/fog/cloud computing architectures for MCS-based ITS
- Performance evaluation of trusted CI-based MCS designed for ITS
- Optimization of trusted CI-based MCS designed for ITS
- Future perspectives of trust, security, and privacy issues and their solutions in using CI techniques for MCS-based ITS

III. SUBMISSIONS

Manuscripts should be prepared according to the “Information for Authors” section of the journal, and submissions should be done through the journal submission website: <https://mc.manuscriptcentral.com/tetci-ieee> by selecting the Manuscript Type of “Trusted mobile crowdsourcing for next generation intelligent transportation systems” and clearly marking “Trusted mobile crowdsourcing for next generation intelligent transportation systems” as comments to the Editor-in-Chief. Submitted papers will be reviewed by at least three different reviewers. Submission of a manuscript implies that it is the authors’ original unpublished work and is not being submitted for possible publication elsewhere.

IV. IMPORTANT DATES

Paper submission deadline: February 1, 2022
Notice of the first round review results: May 1, 2022
Revision due: July 1, 2022
Final notice of acceptance/reject: September 1, 2022

V. GUEST EDITORS

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