Workshop Proposal

- **Title:**
  IEEE 2023 ITSC Workshop on Transportation 5.0

- **Modality:**
  Half-day

- **Scope (no longer than 4 pages), including the following sections:**
  With the fast development and application of sensing, computing, blockchain, and artificial intelligence technologies, huge volumes of real-time social and physical signals for transportation systems have been produced. Transportation 5.0, an emerging field of transportation research and applications, is based on Cyber-Physical-Social Systems (CPSS). Transportation systems, as one of the most complex man-made systems, face a number of complicated and cost/time/space-critical tasks. The goal of this workshop is to encourage people to solve or address these tasks by introducing CPSS based ITS, which can make better use of the pervasive real-time social signals as well as the physical signals. The main idea is to apply the CPSS based ITS technologies to conduct traffic planning, assignment, navigation, management, control and transportation analytics with lower cost, higher accuracy, faster speed, more agility and full response. We hope this workshop can attract transportation researchers and practitioners to join us along this promising new direction in ITS.

  The list of topics includes but not limited to:
  - Cyber-Physical-Social Systems (CPSS) for transportation
  - Parallel transportation with knowledge automation
  - Parallel transportation for traffic control
  - Software defined transportation systems
  - Decentralized Autonomous Organizations and Operations (DAOs) for ITS
  - Blockchain and ITS
  - O2O (online to offline and vice versa) computational transportation experiments
  - Social transportation: traffic and transportation analytics with big data and social signals
  - Crowdsourcing mechanisms for transportation-based Internet of Everything
- New and smart ITS services beyond location-based services (LBS): decision-based services (DBS), task-based services (TBS), information or intelligence-based services (IBS) or knowledge-based services (KBS)
- ITS with Mobile Internet, Cloud Computing, and Internet of Things, Services, and Everything

- Organizers (names, affiliations, emails, and short bio):

  Yisheng Lv (Institute of Automation, Chinese Academy of Sciences, China, yisheng.lv@ia.ac.cn)
  Azim Eskandarian, (Virginia Polytechnic Institute and State University, eskandarian@vt.edu)

- Intended audience and expected attendance of the special session:

  Researchers and Practitioners in the field of ITS

- Materials and equipment needed for the workshop:

  N/A

- Contact details of the proposers (email, postal address, etc):

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