Call for Special Session Proposals

26th IEEE International Conference on Intelligent Transportation Systems

The 26th edition of the IEEE International Conference on Intelligent Transportation Systems (ITSC 2023) is the annual flagship conference sponsored by the IEEE Intelligent Transportation Systems Society (ITSS). This event hosts an attractive agenda of technical contributions, keynote presentations, tutorials, special sessions, and workshops on topics related to the field of Intelligent Transportation Systems (ITS). The conference aims to gather researchers and practitioners working in this field towards sharing, discussing, and opening new paths in the theory, analysis, simulation, data-based modeling, experimentation, deployment, and case studies embracing transportation and mobility at their core. In particular, ITSC 2023 builds upon its motto to invite and encourage prospective authors to present results, findings, perspectives, and developments related to the implementation and deployment of ITS applications that consider human interaction at the core of their design.

ITSC 2023 solicits proposals for half-day and full-day special sessions covering topics that are relevant to the field of intelligent transportation systems and its applications. Interested organizers are invited to submit their special session proposals in the topic areas listed in the Call for Papers of the conference (https://2023.ieee-itsc.org/call-for-paper/call-for-papers/).

The special session proposal should include title, scope, organizers, topics of interest, list of potential contributors, intended audience, expected attendance and material needed for the special session. The proposal must be submitted electronically by following the instructions available in the conference website (https://2023.ieee-itsc.org/). The deadline is February 15th, 2023.

Disclaimer 1: any special session proposal that is incomplete and/or is not submitted by following this form will not be evaluated for its inclusion in the program of the conference.

Disclaimer 2: the minimum number of contributions in a special session is 5 (half-day proposal) and 10 (full-day proposal). Special sessions that receive less than these thresholds will not be allocated as such in the in the program of the conference.

Further enquiries can be forwarded to: contact@2023.ieee-itsc.org
Special Session Proposal

- Title: 7th Special Session on Intelligent Public Transport
- Modality:
  - Half-day
- Scope (no longer than 4 pages), including the following sections:
  - Motivation and general scope
  - Relevance to the ITS community
  - Topics of interest for the special session

Public transport plays a key role in maintaining sustainable mobility levels. Operations in public transportation systems are vulnerable to delays, disruptions, and other forms of uncertainty, such as the variation of passenger demand. Uncertainties related to traffic dynamics, operations, and passenger demand affect the reliability of the services and can lead to low passenger satisfaction and ridership loss. Although uncertainties are hard to predict, the influx of mobility-based data by intelligent sensors and real-time communication networks could be a game changer. The availability of data from smartphones, traffic light sensors, APC/AFC/AVL, and MaaS applications has already impacted how Civil Engineering and Computer Science tackle public transportation problems.

The availability of data enables a whole new bunch of possibilities that are far from being fully explored. For instance, public transportation planning that does not consider historical mobility-based data regarding the operational uncertainty offers services that perform well on the average case. However, they are vulnerable to disruptions that can affect the entire spectrum of the public transport system (e.g., the service frequencies, headways, timetables, vehicle/crew schedules, and transfer synchronizations). This special session will investigate this area and provide answers to pressing research questions, such as:

- Which are the current trends in using data for improving public transport planning and management?
- How can we improve the operations and control of public transportation given the newly available information?
- What kind of new and attractive public transportation services can be provided with emerging technologies?
Being at a crossroad of data science and civil engineering, this special session intends to provide a platform to bring together data and civil engineering scientists working on public transport to build up together the next generation of reliable Urban Mobility.

Topics of interest include (but are not limited to):

- Scheduling efficient public transport services in the era of post-COVID-19;
- Measuring and quantifying reliability/robustness of public transportation systems;
- Public transportation planning under uncertainty, e.g., reliable/robust network (line) planning, frequency setting, timetabling, transfer synchronization, rolling stock / crew scheduling and rostering;
- Intelligent real-time public transport control and operational management (bus bunching, stop-skipping, vehicle holding, transfer coordination, corrective actions);
- Delay and disruption analysis and management;
- Data-driven preventive maintenance policies;
- Analysis of smartcard and smart mobility apps data;
- Network theory applications in public transport;
- Assessment and evaluation of the public transport reliability;
- Public transport scheduling in the era of Mobility-as-a-Service;
- Connected and autonomous public transport planning and operations.

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

Dr Konstantinos Gkiotsalitis
Assistant Professor
Railways and Transport Laboratory, School of Civil Engineering
National Technical University of Athens, Greece
Short bio: Dr Konstantinos Gkiotsalitis is Assistant Professor at the National Technical University of Athens. From 2012 until 2018 he was conducting transportation R&D at NEC Laboratories Europe (Heidelberg, Germany). From 2018 until 2022 he was Assistant Professor at the University of Twente, The Netherlands. He is author of the book “Public Transport Optimization” and serves as Handling Editor at the “Transportation Research Record” journal. ORCID: 0000-0002-3009-1527.

Prof Oded Cats
Full Professor
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Short bio: Oded Cats is Professor of Passenger Transport Systems at Delft University of Technology. He co-directs the Smart Public Transport Lab at TU Delft, leading a research group that works closely with public transport authorities and operators. ORCID: https://orcid.org/0000-0002-4506-0459

Dr Tao Liu
Associate Professor  
School of Transportation and Logistics  
Southwest Jiaotong University, China  
Short bio: Dr. Tao Liu is an Associate Professor of the School of Transportation and Logistics, Southwest Jiaotong University. He received his PhD in Civil Engineering, with an emphasis on Transportation, from the University of Auckland, New Zealand. He once worked at TUMCREAT Ltd., in Singapore, involved in developing a dynamic autonomous road transit system for large megacities using Singapore as a case study. His research interests include public transit planning and operations, transit scheduling, multimodal transport, smart mobility, and mobility as a service (MaaS).  
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- Intended audience and expected attendance of the special session:  
Academic researchers, government officials, and transport practitioners who are interested in intelligent public transport (consultancies, operators, software developers)

- Materials and equipment needed for the special session:  
No special materials and equipment needed

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

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