ITSC 2026 Invited Session

AI-Empowered Automated Driving in Mixed Traffic

Call for Papers (code: 88w8a)

September 15th-18th
IEEE ITSC 2026
Napoli, Italy

Organizers

Yongqi Dong
RWTH Aachen, Germany

Shen Wang
University College Dublin, Ireland

Li Li
Tsinghua University, China

Yongfu Li
Chongqing Univ. of Posts and Telecommunications, China

Miguel Angel Sotelo
University of Alcalá, Spain

Important Dates

1 March, 2026
Submission deadline

1 May, 2026
Notification of acceptance

15 May, 2026
Final paper submission

September 15 – 18, 2026
Conference dates

This invited session is supported by the IEEE ITSS Technical Committees on Automated Mobility in Mixed Traffic and Cooperative & Connected Vehicles.

Scope and Aims

The integration of artificial intelligence (AI) into mixed-traffic environments, where automated vehicles (AVs) share roads with human-driven vehicles (HDVs) and vulnerable road users (VRUs), holds transformative potential for safety and efficiency. Despite advances in vision-language models (VLMs), multimodal foundation models, and deep reinforcement learning (DRL), real-world deployment remains hindered by fragmented solutions, poor generalization, and insufficient validation under dynamic urban conditions.

This invited session aims to bring together interdisciplinary research on AI-empowered automated driving in mixed traffic, emphasizing integrated solutions from sensing to action.

We invite: Empirical, data-driven, theoretical, simulation, and field studies that address the full loop from sensing to action, focusing on empirical validation, robust sim-to-real transfer, and the trustworthiness of AI in heterogeneous traffic flows.

Selected Topics of Interest

- Mixed-traffic datasets, standards, open benchmarks
- Sensor fusion and robust perception using multimodal AI
- VLM/VLA for AV perception and action in mixed traffic
- Behavioural modeling and interaction studies
- AI-based Trajectory prediction & intent recognition
- Decision-theoretic planning incorporating human behaviors
- Motion planning & control under mixed autonomy constraints
- End-to-end AI solutions for automated driving
- Sim-to-real transfer and domain adaptation
- Safety assurance, interpretability, verification, trustworthiness
- Micro/macroscopic mixed-traffic flow modeling
- Field pilots, human factors, and acceptance studies
- Energy/eco impacts and policy/regulatory implications

Submission Guidance

Please submit your manuscript via the *Papercept* at https://its.papercept.net/conferences/scripts/start.pl/. Select "*Submit a contribution to ITSC 2026*", and submit as an "***Invited Session Paper***" with code "**88w8a**".

Please prepare your manuscript according to the ITSC 2026 Information For Authors.

Submission Portal