2024 第七届 IEEE 国际无人系统大会
特邀专题简介表

特邀专题名称
自主式网联智能车辆/交通系统

组织者

1. 刘擎超，副教授，江苏大学
2. 汪龚，副研究员，香港理工大学
3. 张志国，教授级高工，中汽研（天津）汽车工程研究院有限公司
4. 张云顺，副教授，江苏大学

个人简介

刘擎超，江苏大学副教授，博导。兼任美国 TRB 人工智能分委会委员、中国汽车工程学会会员、中国智能交通协会会员。获东南大学博士学位，新加坡南洋理工大学高级访问学者。围绕智能汽车决策规划、队列控制展开研究，先后主持并参与包括国家重点研发计划、国家自然科学基金、交通运输部在内的国家、省部级课题 20 余项，发表论文 30 余篇，授权发明专利 10 余项，是江苏省"六大人才高峰"创新人才团队核心骨干，入选江苏省高校优秀中青年教师和校长境外研修计划、江苏大学青年英才培育计划等。

汪龚，香港理工大学副研究员、长期致力于智能网联车辆系统动力学、车辆主动安全控制、数据驱动的交通行为预测等方向研究。相关成果在 IEEE TITS，TIV，TIE 等国际高水平期刊和会议上发表论文 30 余篇，入学 ESI 高被引论文 2 篇，曾获中国生产力促进中心协会创新发展一等奖，江苏省优秀博士论文，中国机械工程优秀论文等荣誉。担任中国自动化学会智能车工作委员会委员，受邀担任 Chinese Journal of Mechanical Engineering，Journal of Computer Science and Electrical Engineering 等期刊青年编委，Drones 客座编辑。

张志国，中汽研（天津）汽车工程研究院有限公司教授级高工，清华大学深圳研究院校外导师，中国生产力促进中心协会汽车专委会的副主任委员。长期致力于分布式电驱动汽车动力学与控制等方向研究。相关成果在 IEEE TIV 等国际高水平期刊和会议上发表论文 10 余篇，曾获天津市科技进步二等奖等省部级科技成果奖 4 项，主持省部级课题 3 项，参与编制国家标准 1 篇，团体标准 2 篇，授权发明专利 10 余件，受邀担任《中外公路》客座编辑。

张云顺，江苏大学副教授，2017 年获日本东京大学博士学位，东京大学研究员。他发表了 50 多篇期刊论文和内部会议论文。他的主要兴趣包括智能交通系统、汽车工程和机械振动。

特邀专题简介

近年来，智能网联自主车辆/交通系统由于其对感知、决策和控制方面的性能增强，引起研究者的广泛关注。智能网联自主车辆/交通系统是车辆、行人、非机动车等多目标主体构成的复杂大系统，也是具有不同出行需求和目标的异质智能自主系统。在实际应用中，如何使智能网联自主车辆/交通系统在复杂环境中具备安全、高效、节能仍存在巨大挑战。本次专题会议将重点讨论智能网联自主车辆/交通系统领域的最新进展，包括出行决策、规划、控制、协同、机器学习、深度学习、强化学习、多智能体等应用。

本次专题会议将为全球科学家，工程师和相关从业人员搭建交流平台，介绍各自在智能网联自主车辆/交通系统领域取得的最新理论和技术进展。本次专题会议的主题包括但不限于以下领域：

- 自主无人系统人机交互
- 自主交通系统出行决策
- 自主车辆系统动力学
- 自主车辆决策规划

- 自主车辆队列协同
- 自主网联车辆安全
- 自主网联车队控制
- 自主网联车辆节能

Title of Session
Autonomous Connected Intelligent Vehicles/Transportation Systems

Organizers

1. Dr. Qingchao Liu
    Jiangsu University, China
2. Dr. Yan Wang
    Hongkong Polytechnic University, China
3. Dr. Zhiguo Zhang
    China Automotive Engineering Research Institute Co., Ltd. (Tianjin)
4. Dr Yunshun Zhang
    Jiangsu University, China

Biosketches of Organizers
Qingchao Liu, Associate Professor and Ph.D. Supervisor at Jiangsu University. He is also a member of the Artificial Intelligence Subcommittee of the Transportation Research Board (TRB) in the United States, as well as a member of the China Society of Automotive Engineers and the China Intelligent Transportation Systems Association. He obtained his Ph.D. degree from Southeast University and was a Senior Visiting Scholar at Nanyang Technological University in Singapore. His research focuses on intelligent vehicle decision-making and planning, as well as intelligent transportation system. He has presided over and participated in more than 20 national and provincial research projects, including the National Key Research and Development Program, the National Natural Science Foundation of China, and the Ministry of Transportation. He has published more than 30 papers and holds more than 10 granted patents. He is a core member of the Jiangsu Province's "Six Talent Peaks" Innovation Talents Team and has been selected as an Outstanding Young and Middle-aged Teacher of Universities in Jiangsu Province, as well as for the Overseas Training Program for Presidents and the Young Talent Cultivation Program at Jiangsu University.

Yan Wang is a researcher associate at The Hong Kong Polytechnic University. His research interests include autonomous vehicle system dynamics and intelligent safety control. He has published more than 30 papers, enrolled in 2 ESI highly cited papers. He has been awarded the first prize of Innovation and Development of China Association of Productivity Promotion Centers, Excellent Doctoral Thesis of Jiangsu Province, Excellent paper of Chinese Mechanical Engineering, etc. He is a member of the Working Committee of Intelligent Vehicle of Chinese Automation Society, and has been invited to serve as a young editorial board member of Chinese Journal of Mechanical Engineering, Journal of Computer Science and Electrical Engineering, and a guest editor of Drones.

Zhiguo Zhang is a Senior Engineer and Professor at China Automotive Engineering Research Institute Co., Ltd. (Tianjin). He also serves as an external supervisor at Tsinghua University's Shenzhen Research Institute and as the Vice Chairman of the Automotive Special Committee of the China Productivity Promotion Center Association. He has long been dedicated to research in the field of distributed electric drive vehicle dynamics and control. His relevant achievements include the publication of over 10 papers in international high-level journals and conferences such as IEEE TIV. He has been honored with four provincial and ministerial-level scientific and technological achievement awards, including the Tianjin Science and Technology Progress Second Prize. Zhang has led three provincial and ministerial-level projects, participated in the formulation of one national standard and two group standards, and holds more than 10 authorized patents. Additionally, he has been invited to serve as a guest editor for *Journal of China & Foreign Highway*.

Yunshun Zhang received his M.S. in Electrical Engineering from Gunma University, Gunma, Japan. He received a Ph.D. degree from The University of Tokyo, Tokyo, Japan, in 2017, he is a Research Fellow of The University of Tokyo and a Associate Professor from Jiangsu University, Jiangsu, China. He published more than 50 journal papers and internal conference papers.His major interests include intelligent

transportation systems, automotive engineering and mechanical vibration.

Details of Session

In recent years, intelligent connected autonomous vehicles/traffic systems have attracted widespread attention from researchers due to their enhanced performance in perception, decision-making, and control. Intelligent connected autonomous vehicles/traffic systems are complex large-scale systems composed of multiple entities, including vehicles, pedestrians, non-motorized vehicles, etc. They are also heterogeneous intelligent autonomous systems with different travel demands and goals. In practical applications, there are significant challenges in enabling intelligent connected autonomous vehicles/traffic systems to be safe, efficient, and energy-saving in complex environments.

This special session will focus on discussing the latest advances in the field of intelligent connected autonomous vehicles/traffic systems, including applications such as travel decision-making, planning, control, coordination, machine learning, deep learning, reinforcement learning, multi-agent systems, and more.

The session aims to provide a platform for scientists, engineers, and professionals from around the world to exchange ideas and present their latest theoretical and technological advancements in the field of intelligent connected autonomous vehicles/traffic systems. The themes of this special conference include, but are not limited to, the following areas:

- Human-machine interaction in autonomous unmanned systems
- Travel decision-making in autonomous traffic systems
- Dynamics of autonomous vehicle systems
- Decision planning for autonomous vehicles
- Queue coordination for autonomous vehicles
- Safety of intelligent connected autonomous vehicles
- Control of intelligent connected autonomous vehicle fleets
- Energy efficiency of intelligent connected autonomous vehicles