# The 34th Wireless and Optical Communications Conference

**IEEE WOCC 2025**

**SPECIAL SESSION 03**

## Autonomous and Vehicular Networks

As the advancements in autonomous and vehicle network technologies continue to reshape the intelligent transportation landscape, there arises a pressing need to address challenges associated with their implementation. The integration of autonomous vehicles and establishment of robust vehicular networks present a number of complex issues that must be tackled to ensure efficient and safe operations. Autonomous and vehicular networks encompass a wide range of domains, including intelligent transportation systems, connected vehicles, and vehicle-to-vehicle and vehicle-to-infrastructure communications. With the proliferation of these technologies, it is crucial to leverage advanced techniques to overcome the inherent complexities in managing and controlling these systems. This special session aims to bring together researchers, engineers, scientists, and industry professionals involved in the research, development, and deployment of autonomous and vehicle networks. It provides a platform to discuss and address various challenges related to caching strategy, data augmentation, network safety, and intelligent connection network under diverse operational settings. Prospective authors are invited to share their academic results and practical experiences to deal with these challenging issues in this area.

### Topics of the Special Session

- Intelligent caching strategy for 5G-enabled vehicle networks
- Sensing data augmentation for autonomous vehicles
- Privacy-preserving for vehicle networks
- Authentication and key agreement of networks
- Intelligent connection for autonomous vehicles
- Traffic prediction with deep learning
- New architectures for vehicle networks
- Edge computing for vehicle networks
- Multi-objective optimization for vehicle networks
- Cooperative perception for autonomous vehicles

### Session Chairs

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### Planned Contributions ▶▶▶▶

1. A caching scheme for 5G-enabled connected vehicles, Chen Chen, Xidian University.
2. Privacy-preserving authentication scheme in vehicular networks, Jie Cui, Anhui University.
3. An intersection traffic strategy based on a multi-objective optimization method, Long Cheng, Clemson University.
4. Autonomous vehicle perception method in an open scene, Yuhong Li, Stockholm University.
5. Edge computing for autonomous vehicles in an urban scene, Ye Tian, Beijing University of Posts and Telecommunications.
6. Collaborative sensing for autonomous vehicles, Yuxiao, Aalto University.
7. Load balancing for vehicle networks: A reinforcement learning approach, Zhong Li, Donghua University.

### Submission

Submission Deadline : **March 1, 2025**.
Submission Link: https://edas.info/newPaper.php?c=33162&track=129990