Special Issue

Sensing Technologies for Autonomous Driving and Intelligent Transportation Systems

Message from the Guest Editors

This Special Issue focuses on state-of-the-art sensing technologies driving progress in autonomous vehicles and intelligent transportation systems (ITSs). Autonomous driving relies heavily on advanced onboard sensors such as cameras, LiDAR, radar, and ultrasonic devices to perceive the environment, detect obstacles, predict behaviors, and make real-time driving decisions. These sensing systems provide the foundation for safe, efficient, and reliable self-driving capabilities. In parallel, ITS utilizes sensors embedded in transportation infrastructure—including traffic signals, roadways, and connected devices—to address traffic-related challenges like congestion, accidents, and emissions. By collecting and analyzing real-time data, ITS technologies enable dynamic traffic management, incident response, and optimized routing. Addtionally, using vehicle-to-vehicle (V2V) and vehicle-to-infrastructure (V2I) communication, vehicles and systems can share data, extend situational awareness, and coordinate maneuvers. This cooperative approach enhances safety, improves traffic flow, and supports the transition toward fully connected and automated mobility ecosystems.

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Sensors is a leading journal devoted to fast publication of the latest achievements of technological developments and scientific research in the huge area of physical, chemical and biochemical sensors, including remote sensing and sensor networks. Both experimental and theoretical papers are published, including all aspects of sensor design, technology, proof of concept and application. Sensors organizes Special Issues devoted to specific sensing areas and applications each year.

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