

Special Issue

Applications of Computer Vision for Autonomous Driving

Message from the Guest Editors

Computer vision is a cornerstone of autonomous driving, enabling vehicles to perceive, understand, and anticipate complex, dynamic environments. Despite rapid progress in 2D/3D perception and multi-sensor fusion, deploying reliable and efficient vision systems at scale remains challenging due to long-tail events, adverse weather and illumination, domain shifts, compute and memory constraints on embedded hardware, and stringent safety and validation requirements. This Special Issue aims to gather advances that address these challenges and translate cutting-edge research into robust, real-world autonomy. We welcome contributions spanning the full perception stack—from sensing and calibration to on-vehicle deployment and evaluation. Topics of interest include camera-, LiDAR-, and radar-based perception; 2D/3D object detection and tracking; semantic and instance segmentation; depth estimation; BEV scene representations and occupancy prediction; and tightly coupled multi-modal fusion. This Special Issue invites original research articles, communications, and reviews that advance trustworthy, efficient, and deployable computer vision for autonomous and connected vehicles.

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Electronics is a multidisciplinary journal designed to appeal to a diverse audience of research scientists, practitioners, and developers in academia and industry. The journal is devoted to fast publication of latest technological breakthroughs, cutting-edge developments, and timely reviews of current and emerging technologies related to the broad field of electronics. Experimental and theoretical results are published as regular peer-reviewed articles or as articles within Special Issues guestedited by leading experts in selected topics of interest.

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