



electronics



Special Issue Reprint

Recent Advances in Motion Planning and Control of Autonomous Vehicles

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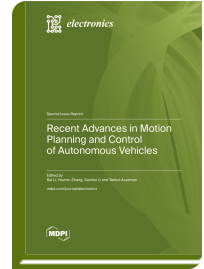
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Autonomous vehicles are increasingly prevalent, navigating both structured urban roads and challenging offroad scenes. At the core of these vehicles lie the planning and control modules, which are crucial for demonstrating the intelligence inherent in an autonomous driving system. The planning module is responsible for devising an open-loop trajectory, taking into account a variety of environmental restrictions, task-related demands, and vehicle-kinematics-related constraints, while the control module ensures adherence to this trajectory in a closed-loop manner. This adherence is vital in a range of conditions, including diverse weather scenarios, different driving situations, and in response to potential disturbances such as mechanical failures or cyber threats. In certain contexts, these modules are collectively referred to as 'control', with the planning component considered an open-loop controller. This Special Issue focuses on the latest research trends in planning and control methods for autonomous driving. It comprises 11 papers that cover a broad spectrum of applications, including occlusion-aware motion planning in warehouses, control strategies for articulated vehicles, cooperative trajectory planning for autonomous forklifts, and tracking control for underwater vehicles in the face of disturbances and uncertainties. These contributions collectively underscore the diverse and evolving nature of autonomous vehicle technology.



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