Special Issue

Advances in Intelligent Autonomous Vehicle L4&5 Technologies: Localization and Mapping in Challenging Road Structures and Adverse Weather Conditions

Message from the Guest Editor

Mapping and localization are important pillars to enable safe autonomous driving. In levels four and five, the precise mapping of critical environments, such as high buildings, dense trees, long tunnels, multilayer junctions, underpasses, and bridges, is very challenging and necessary to deploy autonomous vehicles in modern cities regardless the complexity of road structures. In addition, implementing online mapping modules is very important to reduce the cost of building and updating maps using many autonomous agents. Consequently, the accurate localization inside the precisely generated maps in adverse weather factors and critical environmental conditions, such as snow, wet, old, grass, foggy, and shoveled surfaces, is a dominant demand to elevate the safety and quality of autonomous driving to L4&5 and commercialize autonomous vehicles globally.

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