

3D Perception for Autonomous Driving

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Abstract

In this talk we present our works on 3D video perception for autonomous vehicles using RGBD data. A visual SLAM system for motion tracking of vehicles will be described to assist autonomous driving in real environments including highways, residential, semi-urban and urban roads. The proposed approach uses motion prior to obtain accurate motion estimation in metric scale. 3D object detection and tracking are developed for obstacles avoidance, including approaches to enhance object detection in different environments. The proposed RGBD image processing techniques for SLAM, object detection and object tracking will be evaluated using publicly available benchmark datasets and experimental datasets we collected for practical driving scenarios.