

Computer Science > Computer Vision and Pattern Recognition

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# Object Detection in Autonomous Vehicles: Status and Open Challenges

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Object detection is a computer vision task that has become an integral part of many consumer applications today such as surveillance and security systems, mobile text recognition, and diagnosing diseases from MRI/CT scans. Object detection is also one of the critical components to support autonomous driving. Autonomous vehicles rely on the perception of their surroundings to ensure safe and robust driving performance. This perception system uses object detection algorithms to accurately determine objects such as pedestrians, vehicles, traffic signs, and barriers in the vehicle's vicinity. Deep learning-based object detectors play a vital role in finding and localizing these objects in real-time. This article discusses the state-of-the-art in object detectors and open challenges for their integration into autonomous vehicles.

Subjects: **Computer Vision and Pattern Recognition (cs.CV)**; Artificial Intelligence (cs.AI); Machine Learning (cs.LG)

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