**Cover Letter**

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Object detection is an actively researched field of computer vision, and notable research outcomes have been presented through an integration with deep learning. However, most previous studies on object detection have focused on evaluating the object detection performance for multiple classes. To a practical extent, such detection contrasts with how the type of classification required for object detection models is limited to a few numbers of classes. For example, the object detection classes required for autonomous vehicles or in vehicle detection services are limited to small spe-cific classes, such as vehicles, persons, and road signs. In other words, the need has arisen to con-firm which model exhibits an excellent performance for a small, specialized class such as vehicle object detection. Therefore, we evaluate representative object detection models to identify which models is more appropriate for vehicle object detection services. The results show that CenterNet [9] achieves the best performance for vehicle object detection during autonomous driving and for CCTV use among the three models, followed by YOLO v4 [7] and SSD [8].

* Neither the manuscript nor any parts of its content are currently under consideration or published in another journal.