

ABSTRACT

Advanced Driving Assistance System (ADAS), used by vehicle 4 wheel or more, one of the systems that help the driver when driving a vehicle and parking the vehicle, usually this system is equipped with a camera to help the driver to see the surrounding condition. Most of the traffic accident was caused by human error, for example, vehicle collision, this accident was caused by the driver doesn't calculate the distance between another vehicle.

This study implemented ADAS which focuses on estimating distance object and objects detection. The Benefit of this system could detect an object and estimating an object using Deep Learning. The architecture used for object detection are MobileNetV2, EfficientNet, and VGGNet16 the localization method was used is Single Shot Detection (SSD). Distance Estimation method using Depth prediction/estimation, the architecture used are DenseDepth and MonoDepth2.

Result of this study, based on experiments architecture deep learning for object detection using evaluation metric mean Average Precision (mAP) the highest score was achieved by MobileNetV2 which is 75%. The Architecture Deep Learning for distance estimation using evaluation metrics RMSE (Root Mean Square Error), the lowest score was achieved by DenseDepth which are 4.170, and Monodepth2 4.863.

Keyword: Advance Driving Assistance Systems, Distance Estimation, Object Detection