### *Abstract*

*In recent years, CNN has been widely employed for various detection tasks such as color and shape detection, as well as identifying vehicles in images. This research applies Convolutional Neural Networks (CNN) for vehicle detection in driving environments to create an intelligent vehicle system. This system enables vehicles to distinguish and recognize objects in their surroundings, specifically focusing on other vehicles, particularly cars. Furthermore, the intelligent vehicle system aims to replace or enhance human capabilities in vehicle control. Objects detected by the system are directly linked to the driver through a notification screen, in this case, a laptop screen. The dataset utilized in this study is derived from the KITTI Dataset. To assess accuracy, the Intersection over Union (IoU) method is employed. The outcomes of this research yield an accuracy of 95.44% for front vehicle detection, 94.84% for rear vehicle detection, and 95.79% for both front and rear vehicle detection. These results are obtained through IoU calculations, indicating that the model exhibits a Good Fit performance.*


**Keywords:** *Convolutional Neural Network (CNN), intelligent vehicle system, Intersection over Union (IoU), vehicle detection.*