ABSTRACT

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AUTOMATED MOTOR VEHICLE COUNTING SYSTEM USING YOU ONLY LOOK ONCE (YOLO) ALGORITHM V8

Vehicles play a significant role in human mobility, impacting social, economic, and industrial aspects. The growth in the number of motor vehicles, particularly in Indonesia, has escalated traffic density and congestion. To address this issue, road widening is considered a potential solution, but it requires meticulous analysis. The utilization of the Area Traffic Control System (ATCS) aids monitoring, yet manual calculation methods are less efficient and accurate. Integrating ATCS with deep learning, such as the You Only Look Once (YOLO) algorithm, enables automatic vehicle count computation. Utilizing YOLO involves detecting and counting the number of vehicles traversing the road, classifying them based on categories such as cars, motorcycles, buses, and trucks. After conducting tests on four sample video datasets, the precision and recall performance values are notably high. Moreover, the results of testing on a sample video dataset captured during daylight hours yielded an F1 Score of 0.97.

Bibliography (2006 – 2023)