ABSTRACT

Parking is one of the most common challenges in urban areas. The growth of vehicles is increasing at a rate that is not proportional to the availability of parking space, resulting in congestion, pollution, and excessive fuel consumption.

This research aims to design and build a webcam camera-based Parking Space Counter system by utilizing OpenCV Python. This system is expected to be able to detect the availability of parking spaces automatically and provide real-time information to motorists about available parking slots.

The results showed a precision of 67%, indicating that the system correctly identified occupied parking spaces in 67% of the predictions. Recall reached 100%, indicating the model's ability to detect all occupied parking spaces. The F1 value of 80% reflects a balanced performance between precision and recall, indicating the effectiveness of the system. This suggests that although the model can identify occupied parking spaces well, there is still room for improvement in reducing false positives to further increase precision.

Keywords: Parking, Webcam, OpenCV, F1 Score.