A DEEP LEARNING SOLUTION FOR VEHICLE LICENSE PLATE DETECTION

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Accurate vehicle license plate detection is crucial for various applications, including traffic management and law enforcement. Deep learning has emerged as a powerful tool for enhancing the accuracy and efficiency of this task. This research aims to develop and evaluate a deep learning-based solution for detecting vehicle license plates with high accuracy and efficiency. The proposed solution utilizes a Convolutional Neural Network (CNN) architecture trained on a diverse dataset of vehicle images. Various preprocessing techniques, including image augmentation, were employed to enhance the model's robustness. The model was evaluated using metrics such as precision, recall, and Intersection over Union (IoU) to ensure its effectiveness. The experimental results demonstrate that the proposed deep learning model achieved a high detection accuracy of 95%, outperforming traditional methods in both precision and recall. These findings suggest that the developed deep learning solution is a reliable and efficient approach for vehicle license plate detection. Future work will focus on optimizing the model for real-time applications and extending its capabilities to license plate recognition.

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