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Vehicle Plate Detection and Recognition Using Yolov8 & PaddleOCR

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Abstract: This research presents a deep learning-based system for real-time vehicle license plate detection and recognition leveraging the YOLOv8 object detection framework and the Paddle-OCR recognition engine. The proposed solution addresses the complexities of varying lighting conditions, plate orientations, font styles, and occlusions in natural scenes. A modular pipeline is developed that first locates license plates using YOLOv8 and subsequently extracts textual data through Paddle-OCR's robust multilingual character recognition capabilities. The methodology is optimized for high precision, scalability, and deployment on edge or cloud platforms, offering practical applicability in smart traffic surveillance, toll management, and law enforcement automation. Experimental results validate the efficacy of this hybrid approach with competitive detection accuracy and recognition reliability across diverse scenario

Keywords: deep learning



