



International Journal of Multidisciplinary Conference Proceedings

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Number Plate Detection and Registration Data Integration

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KEYWORDS	ABSTRACT
Licence Plate Recognition System, Data Integration	<p>This project focuses on the development of a real-time number plate detection and registration data integration system using computer vision and deep learning techniques. The system is designed to capture live video streams, detect vehicle number plates, extract alphanumeric characters using Optical Character Recognition (OCR), and retrieve vehicle registration details from a pre-existing database. The system operates in multiple stages: 1. Video Capture: A live feed is obtained from surveillance cameras or other video input sources. 2. Number Plate Detection: Using deep learning-based object detection models such as YOLO (You Only Look Once), the system identifies and extracts the region of interest (ROI) containing the number plate. 3. Character Recognition: OCR techniques, such as Tesseract OCR or deep learning-based text recognition models, are applied to extract alphanumeric characters from the detected number plate. 4. Database Integration: The extracted number is matched against a vehicle registration database to retrieve relevant details, such as the owner's information, vehicle model, registration validity, and law enforcement records. The primary objective of this system is to enhance security, traffic monitoring, and law enforcement operations. By automating vehicle identification, it can assist in detecting stolen vehicles, traffic violations, unauthorized access, and criminal activities.</p>
ARTICLE HISTORY	
Date of Publication:16-04-2025	
Conference Organizer(s)	
Research Consultancy on Social & Management Development & University of Karachi DHA Suffa University	
Corresponding Email	Shahwar234@gmail.com
Volume-Issue-Page Number	2(1) 22
Citation	Uddin, M. S., & Jameel, J. (2025). Number Plate Detection and Registration Data Integration. <i>Proceedings of the 1st International Conference on Innovation and Sustainability in Management and Social Sciences, *International Journal of Multidisciplinary Conference Proceedings</i> , 2(1).