Helmet and Number Plate Detection using YOLOV5

Dr. Manisha Pise, Ananya Saini, Payal Pochampalliwar, Neha Satpute, Pranjali Awale
Department of Computer Science and Engineering
Rajiv Gandhi College of Engineering Research and Technology, Chandrapur, India

Abstract: *Ensuring the safety of motorcycle riders on roads is paramount, and the use of helmets plays a critical role in achieving this goal. Additionally, enforcing traffic laws, such as identifying motorcycles without helmets and recognizing their license plates, contributes significantly to maintaining road safety and upholding regulations. This project introduces a robust system designed specifically for detecting helmets and recognizing number plates on motorcycles. The system employs the YOLOv5 object detection model to identify motorcycles in images or videos, followed by assessing whether riders are wearing helmets. In cases where a rider is detected without a helmet, the system utilizes optical character recognition (OCR) to recognize the motorcycle's license plate. EasyOCR, a Python-based OCR library, is leveraged for extracting text from license plate images, and the extracted information is stored in a CSV file for subsequent analysis. This proposed system offers a comprehensive solution to improve road safety and enforce traffic regulations pertaining to helmet usage and license plate recognition for motorcycles.*

Keywords: Yolo, OCR