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Helmet Detection

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Abstract: Currently, there is a prevailing issue concerning the practice of riding motorcycles without helmets. Despite legislation mandating helmet usage for public safety reasons, there remains a significant number of individuals who disregard this requirement, leading to an alarming increase in accidents and fatalities. To mitigate this problem, we propose a method for the automated detection of helmetless motorcyclists through surveillance systems. Our approach utilizes the YOLO deep learning framework for detecting individuals without helmets, while a SM algorithm is employed recognition. This process involves several stages, including vehicle classification, pre-processing, and number plate identification, using images or videos captured by surveillance cameras. Implementing such a system is crucial for enhancing road safety and preventing accidents. By automatically identifying helmetless riders and extracting their vehicle numbers, law enforcement agencies can efficiently apprehend violators. This data can then be utilized to impose fines on repeat offenders, thereby reinforcing compliance with helmet regulations and reducing the occurrence of preventable accidents.

Keywords: YOLO, Convolutional Neural Network, SVM, OCR

