

# Intelligent Traffic Lane Management System

Ms. Rajashree Thosar, Sarthak Pampattiwar, Prathmesh Gidage, Pravin Khakale

Department of ETN

G. H. Raisoni College of Engineering and Management, Pune, Maharashtra, India

**Abstract:** *Traffic congestion in urban areas has become a significant challenge, resulting in increased travel times, environmental pollution, economic losses, and heightened stress levels among commuters. Traditional traffic management systems often struggle to adapt to dynamic traffic conditions, leading to inefficient utilization of roadways and suboptimal traffic flow. To address these pressing issues, we propose an Intelligent Traffic Lane Management System (ITLMS) designed to optimize traffic flow, enhance road safety, and reduce the environmental impact of vehicular emissions. The ITLMS leverages advanced technologies, including video acquisition, image processing, and Optical Character Recognition (OCR), to effectively manage lane utilization and monitor vehicle speeds in real-time. By capturing high-resolution video footage of traffic conditions and analyzing this data, the system can make informed decisions that improve traffic distribution across lanes. The expected outcomes of implementing the ITLMS include a significant reduction in traffic congestion, shorter travel times, enhanced road safety, lower emissions, and fuel savings. Furthermore, this system aims to increase overall road capacity, ensuring a more efficient and sustainable urban transportation network. Ultimately, the ITLMS represents a modern solution to the growing problem of urban traffic congestion*

**Keywords:** Open CV, Convolutional Neural Network, Decision Making