

**Major Project**

**Smart traffic management System**

**Abstract: -**

Traffic congestion is a pressing concern exacerbated by the growing population and increasing number of vehicles in cities. It not only leads to delays and stress for drivers but also results in higher fuel consumption and elevated levels of air pollution. Megacities are particularly affected by this issue, and its persistent nature necessitates real-time road traffic density calculations for improved signal control and efficient traffic management.

Among the critical factors influencing traffic flow, the traffic controller plays a pivotal role. Therefore, there is a pressing need to optimize traffic control systems to cope with the rising demand. Our proposed solution leverages live feed from traffic junction cameras, employing advanced image processing and AI techniques to accurately assess traffic density. The system also focuses on developing an algorithm that dynamically adjusts traffic lights based on vehicle density, aiming to alleviate congestion, provide swifter transit for commuters, and mitigate pollution levels.

**Requirements:**

* Python software

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