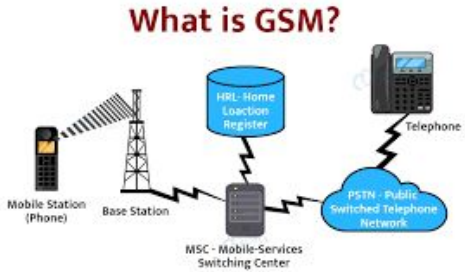
Idea/Approach Details

Choose energy-efficient LED lighting fixtures based on lumens, color temperature, and lifespan.

A central control system that can manage the entire lighting network efficiently.

Ambient light sensors, traffic camera and communication modules example: GSM for real-time monitoring and adaptive lighting.

Machine Learning Model for Vehicle Road Direction Detection.



Communication Modules

GSM modules are utilized for real-time communication and data transfer between the smart lighting system and a central control hub.

These modules enable the transmission of data, commands, and alerts over the cellular network, ensuring a reliable and constant flow of information.

The system can send alerts or updates to the central control hub based on sensor readings or camera analysis.

Ambient Light Sensors

Ambient light sensors are deployed within the smart lighting system to measure the natural light available in the surroundings.

These sensors continuously monitor light levels, detecting variations caused by factors such as weather conditions, time of day, and seasonal changes.

The data collected from the sensors helps in determining the appropriate brightness level needed for the street lights at any given moment.

Machine Learning Model for Moving Vehicle/Human Detection

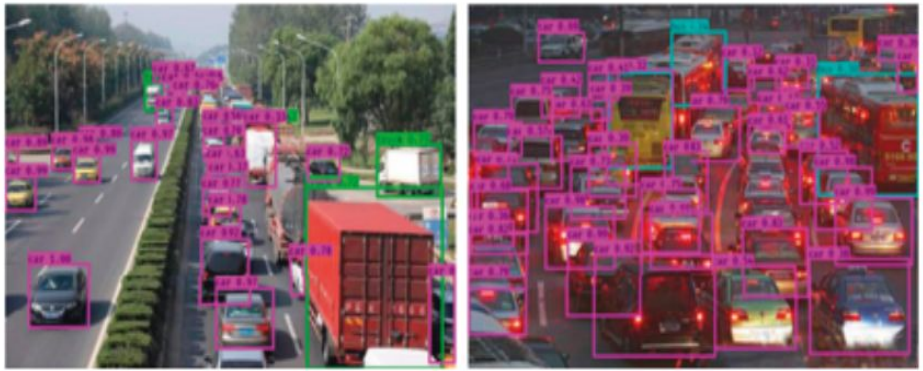


FIGURE 3: Diagram of the detection on road vehicles.

FIGURE 4: Diagram of the detection on bike category and person category.

To accurately detect the road direction of vehicles in real-time. By training the model on a diverse dataset of annotated images or videos, the model learns to identify whether a vehicle is moving left, right, or straight. This technology has significant applications in enhancing road safety, optimizing traffic flow, and enabling intelligent transportation systems, contributing to a more efficient and secure road network.

Idea/Approach Details

Avg Yearly cost of 1Km street wide for 2 lane road:
510,417 for 10 hours a day

Now using the idea :
100% - 7pm - 10pm - 3 hours
40% - 10 pm - 5 am - 7 hours

The Annual cost
2,45,000/-

Total cost saving
265,417/-