

IoT Based Real-Time Street Light Fault Detection and Maintenance System with Machine Learning Driven Solution Prediction

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Abstract: *The proposed system provides a complete solution for fault prediction with suggested fixes, accurate position tracking, automated real-time streetlight fault detection, and an effective maintenance strategy. For both general city beauty and public safety, street lighting functionality is essential. Our technology makes use of the Internet of Things (IoT) to continuously monitor streetlights in real-time and quickly identify problems through machine learning. Every streetlight has sensors installed that can detect abnormalities instantly and provide information to a central control system for prompt defect finding. By ensuring a responsive and effective system, this method shortens the period between defect discovery and repair. The system's ability to provide accurate geographic information, offer remedies for errors that are recognized, and help maintenance workers locate and resolve problems more rapidly are some of its important features. By integrating geographic data, maintenance operations are directed and efficient, reducing downtime and improving system reliability overall. This study explores the technical features of the sensor-based system and highlights how effectively it functions as a reliable and straightforward option for regions trying to enhance their maintenance procedures for streetlights*

Keywords: Internet of Things, Machine Learning

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