

# **AUTOMATED SYSTEM FOR REAL-TIME STREET LIGHT FAULT DETECTION USING IOT**

TEAM

SUDHARSAN S – 210701266

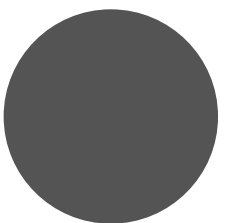
SUBHIKSHAA S – 210701264

TAMIL PRIYA V – 210701282

# PROBLEM STATEMENT

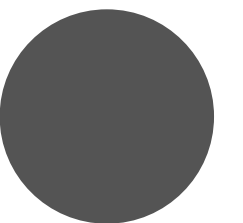


Develop an automated system for real-time street light fault detection, precise location tracking, and efficient maintenance in cities to enhance urban lightning infrastructure



# ABSTRACT

The "Automated System for Real-Time Street Light Fault Detection using IoT" introduces an innovative approach to optimize urban lighting infrastructure by integrating advanced technologies. Leveraging machine learning algorithms and IoT sensors, the system swiftly detects street light faults in real-time and transmits relevant information to the control system instantaneously. This proactive approach facilitates efficient maintenance strategies, ensuring timely resolution of issues. With its scalable architecture and seamless integration with existing city infrastructure, this solution emerges as a comprehensive tool for addressing the dynamic challenges of urban lighting management.



# LITERATURE SURVEY

TITLE	AUTHOR	PUBLICATION	YEAR	CONTRIBUTIONS	LIMITATIONS
Automated fault detection and diagnostics for LED street lighting systems	Anay Waghale and Michael Poplawski	Technology	2023	Automation, Efficiency, Reliability	Cost, Implementation, Complexity
Monitoring Street Light Using IoT Technology to Detect Fault Automatically	R.Raja & S.Regina	Technology	2023	Automation, Efficiency, Reliability	Cost, Implementation, Complexity
Unify street light fault detection And location tracking contingent On IoT	G.Kiran, N.Prachi	IJCRT	2023	Integration, IoT, Efficiency	Cost, Scalability, Reliability
Smart streetlight system using mobile applications: secured fault detection and diagnosis with optimal powers	Ravilla Dilli	Springer	2023	Mobile Integration, Security, Optimization	Complexity, Maintenance, Scalability

# LITERATURE SURVEY

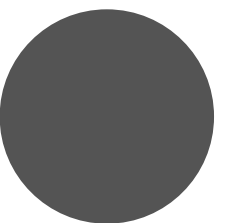
TITLE	AUTHOR	PUBLICATION	YEAR	CONTRIBUTIONS	LIMITATIONS
Design and Implementation of Smart Street Light Automation and Fault Detection System	M Karthik , V Deepikapriya	IEEE	2022	Automation, Efficiency, Sustainability	Cost, Maintenance, Connectivity
Smart street lighting system with fault detection	Resmara S	Manipal Journal of Science and Technology	2022	Highway Safety, Automation, Monitoring	Dependency, Maintenance, Scalability
IOT based Automatic Street Light Control and Fault Detection	Prashant Kumar	TURCOMT	2021	GSM module, Automation	Connectivity, Module defect identification
Street Light Controlling and Monitoring of Fault Detection using LoRa	N.Sravani, Y. Latha, G. Nirmala	International Journal for Modern Trends in Science and Technology	2021	LoRaWAN technology, Efficiency	Cost, Scalability

# LITERATURE SURVEY

TITLE	AUTHOR	PUBLICATION	YEAR	CONTRIBUTIONS	LIMITATIONS
IoT based Automatic Damaged Street Light Fault Detection Management System	Ashok Kumar Nanduri, Siva Kumar Kotamraju	(IJACSA) International Journal of Advanced Computer Science and Applications	2020	Efficiency, Automation, Remote monitoring	Cost, Complexity, Connectivity
National highway street light faulty detection & monitoring system	G.PRAVEEN , B. RAVI TEJA	JETIR	2019	Highway Safety, Automation, Monitoring	Dependency, Maintenance, Scalability

# EXISTING SYSTEM

The existing system uses GPS for locating the place of street light faults which might sometimes be inaccurate. It also does not include the reason or cause of fault. It employs GSM modules and 89C51 microcontrollers to enhance efficiency, automatically adjusting illumination based on preset time delays and sending updates via phone. Smart lighting, also known as adaptive street lighting, optimizes energy use without compromising safety by dimming when not needed. This addresses the inefficiencies of manual systems, reducing electricity wastage and costs associated with constant operation but does not provide dynamic assistance with fault detection.



# COST ESTIMATION

	Quantity		Rate	Amount
• ESP 8266 Wi-Fi Module	–	1 x	380 Rs.	= 380
• 12V 1amp Adapter	–	1 x	120 Rs.	= 120
• Arduino UNO	–	1 x	880 Rs.	= 880
• LDR sensor	–	3 x	73 Rs.	= 219
• Transistor boards	–	3 x	99 Rs.	= 297
• LED bulbs	–	3 x	20 Rs.	= 60
• Resistors	–	3 x	2 Rs.	= 6
• Bread Board	–	1 x	70 Rs.	= 70
• Jumper wires	–	20 x	2 Rs.	= 40
TOTAL				= Rs. 2072

