

Crowdsourced Civic Issue Report and Resolution System by AI and ML

Ms. Nivetha V, Mr. Sribalaji P, Mr. Praveen kumar S, Mr. Kamalesh B Mrs. Kirthiga R (Mentor)

ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

SRI SHAKTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY, COIMBATORE.

Abstract - Crowdsourced Civic Issue Reporting and Resolution System Using AI and ML is the project presents a bilingual (English–Tamil) web application designed to make civic issue reporting more accurate and efficient. Citizens can report problems such as potholes, garbage accumulation, and streetlight failures by submitting descriptions, locations, and images without giving petitions to the government. To enhance reliability, the system uses Artificial Intelligence (AI) to automatically assign priority levels based on the severity and urgency of each issue. At the same time, a Machine Learning (ML) model verifies the authenticity of uploaded images, detecting fake, duplicated, or manipulated reports that commonly slow down civic workflows. Verified issues are forwarded to the appropriate authorities for timely action. By combining crowdsourced reporting with AI and ML automation, the system improves transparency, reduces manual effort, and supports faster resolution of critical civic problems, making it suitable for smart city use.

Key Words: AI, ML, Civic Reporting, Image Verification, Bilingual Web App

1. INTRODUCTION

Civic issue reporting is essential to keeping communities tidy and well-run, but conventional reporting techniques frequently have problems like incomplete information, delays, and fraudulent submissions. Because of these constraints, authorities find it challenging to recognize pressing issues and take appropriate action. The project fills this gap by launching a bilingual (English–Tamil) web application that makes it simple for residents to report problems like potholes, trash buildup, water leaks, and broken streetlights. The system integrates Artificial Intelligence (AI) to automatically assign priority levels based on issue severity and Machine Learning (ML) to verify the authenticity of uploaded images, reducing

false reports. By combining crowdsourcing with intelligent automation, the solution enhances accuracy, transparency, and efficiency in modern civic management.

2. Body of Paper

A. System Overview

By combining artificial intelligence (AI), machine learning (ML), and bilingual accessibility, the proposed AI-Enabled Crowdsourced Civic Issue Reporting and Resolution System seeks to expedite the management of public issues. Through an easy-to-use Tamil-English web interface, the system allows citizens to report civic issues. Automated pipelines that categorize issue priority and verify the legitimacy of submitted images process their inputs. This ensures accurate reporting, reduces administrative load, and enhances the efficiency of local governing authorities.

B. User Interaction

The user interaction phase focuses on simplifying how citizens submit issues. Users can upload supporting images and enter important information like the category, location, and description. In order to guarantee inclusivity for varied communities, the interface supports both Tamil and English. Users can monitor the status of their complaint and receive confirmation after submitting it. During this stage, citizens and civic authorities establish a structured communication channel and increase public participation.

C. Input Processing Phase

The system verifies and preprocesses the input data after a user submits an issue. Images are standardized through compression and resizing techniques, and text data is normalized, tokenized, and noise-removed. After that, the backend verifies that only legitimate submissions are accepted by checking for accuracy and completeness. This preprocessing stage lowers errors and enhances model performance, making it essential for precise AI and ML operations.

D. AI-Based Priority Classification

The AI module analyzes the textual description and contextual cues to classify issues into High, Medium, or Low priority. Natural Language Processing (NLP) methods identify severity indicators such as safety hazards, water leakage, road damage, or environmental concerns. Automated prioritization helps authorities manage resources efficiently, ensuring urgent issues receive immediate attention. This reduces workflow delays and enhances response accuracy.

E. ML-Based Fake Image Detection

To prevent misuse of the platform, a machine learning module verifies the authenticity of uploaded images. A Convolutional Neural Network (CNN) model compares the image with existing submissions to detect duplicates, manipulated visuals, or irrelevant content. This feature helps maintain data integrity, reduces false complaints, and ensures that administrative actions are based on reliable evidence.

F. Data Management

All validated reports are securely stored in a structured database containing user details, timestamps, categorized priority, image authenticity status, and resolution progress. The database design supports scalability and quick retrieval of information. It also enables long-term storage for audits, analytics, and performance monitoring.

G. Administrative Resolution Phase

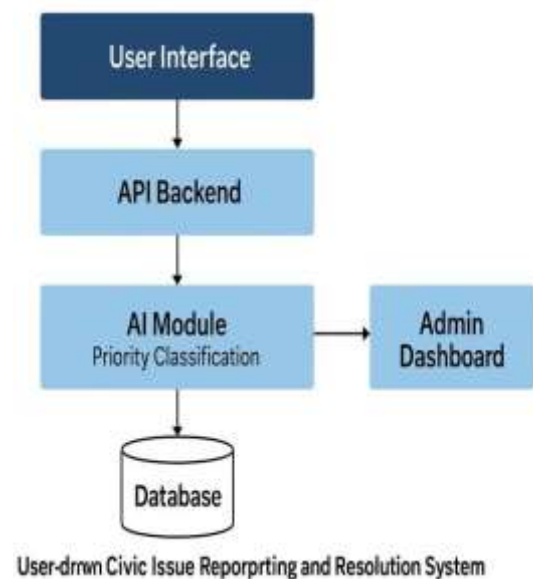
The admin dashboard provides a centralized workspace for authorities to monitor and manage issues. Complaints are displayed based on priority, enabling faster decision-making. Administrators can update issue status, assign personnel, upload verification documents, and communicate updates back to users. This creates transparency and accountability in civic operations.

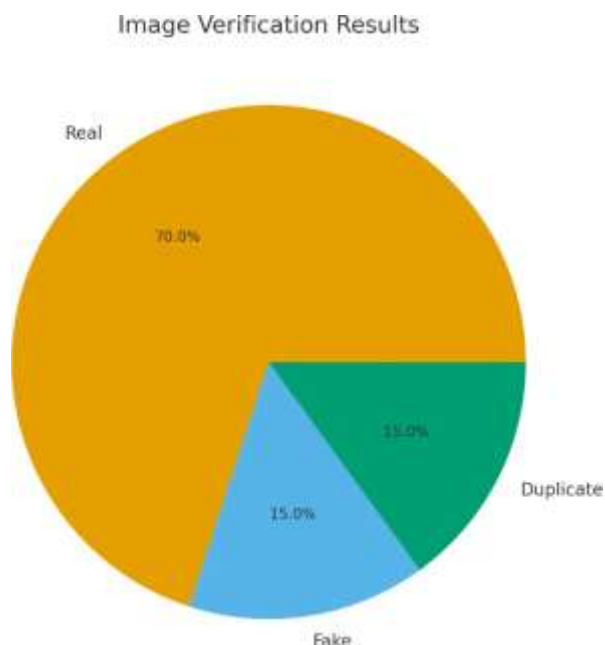
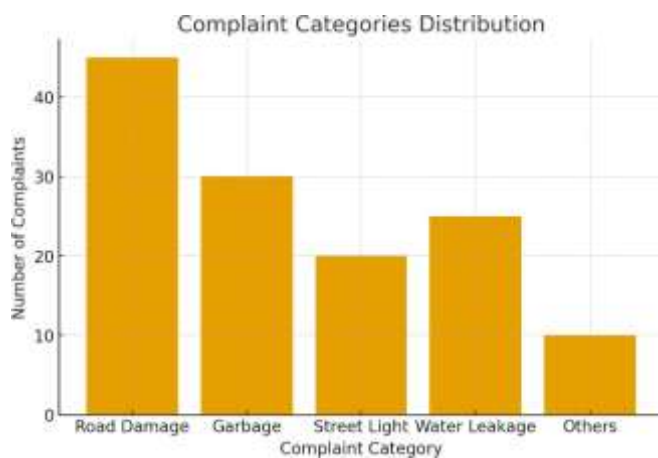
Location	Exact place of reported issue	Gandhipuram, Coimbatore
Category	Type of issue	Road Damage
Description	Text describe civic issue	“Road is broken near bus stop, causing traffic.”
Uploaded Image	File name of user image	road_damage.jpg
Image Status	ML verify result	Verified – Real
Priority Status	AI-classified urgency	High
Submission Time	Timestamp of complaint submission	12-11-2025, 04:22 PM
Admin Remarks	Comments from authorities	“Work order issued”
Status	Current issue status	In Progress

Table -1: Sample Table format

Field Name	Description	Sample Value
Report Id	Unique ID assigned to each complaint	RPT10245
User ID	Identifier of the user submitting the issue	U5893
User Name	Name of the citizen	Nivetha

Figure-1





3. CONCLUSIONS

Users can submit issues with images, location, and priority levels using the straightforward and efficient Crowdsourced Civic Issue Reporting System presented in this study. The system reduces false submissions and speeds up response times by assisting administrators in rapidly determining whether reports are authentic, fraudulent, or duplicates. The majority of the reports were authentic, as demonstrated by the charts and sample data, demonstrating the value of crowdsourcing. All things considered, the suggested system promotes quicker civic issue resolution, increases transparency, and stimulates public involvement. In the future, it can be readily extended with sophisticated verification and smart-city features.

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