



SRM VALLIAMMAI ENGINEERING COLLEGE
(An Autonomous Institution)
**DEPARTMENT OF ARTIFICIAL INTELLIGENCE
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ZEROTH REVIEW

CivicLens AI :Smart Facility Management & Grievance Resolution for Modern Organizations.

PROJECT MEMBERS

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PROBLEM STATEMENT :

Large organizations like universities and corporate campuses struggle with inefficient, manual grievance management systems that lead to communication gaps and delayed repairs. Currently, students and employees lack a transparent way to report infrastructure issues, often resulting in vague, duplicate, or unverified complaints that overwhelm maintenance departments. Without real-time geo-tracking or automated verification, officials cannot prioritize urgent safety hazards effectively. This "black hole" of reporting erodes trust and wastes institutional resources. There is a critical need for an AI-powered, geofenced platform that utilizes multimodal analysis to validate reports, eliminate noise, and provide live status updates, ensuring a streamlined, accountable resolution process.

EXISTING SYSTEM

Commonly Used Methods:

- Physical Complaint Registers: Logbooks kept at security gates or hostel warden offices.
- Email-Based Ticketing: Sending photos or text to a generic "support@" or "maintenance@" email.
- WhatsApp/Phone Calls: Messy, informal reporting to individual supervisors or staff.
- Static Web Forms: Basic online forms on the college portal that lack location data or photo verification.

Disadvantages of the Existing System

- Lack of Precise Location (GPS)
- High Rate of Duplicate Reports
- Manual Filtering & Verification
- No Real-Time Status Tracking: Users (students/staff) have no way to know if their issue is "In Progress" or "Resolved."
- Human Error & Bias

LITERATURE SURVEY:

S.NO	TITLE	AUTHOR	YEAR	INFERENCE
01	"Smart Campus Maintenance using IoT and Mobile Crowdsensing"	J. Lee, M. Kim, S. Park	2021	Explores using mobile apps and IoT sensors for facility management. Highlights the potential of citizen reporting (crowdsensing) but often lacks AI-driven verification and multi-tenant capabilities.
02	"Multimodal AI for Urban Grievance Classification and Severity Assessment"	A. Singh, P. Sharma	2023	Discusses using combined image and text analysis (multimodal AI) for automatically categorizing and prioritizing urban complaints. A strong foundation for CivicLens's AI core, but often generic for city-wide use, not organization-specific SaaS.

LITERATURE SURVEY:

S.N O	TITLE	AUTHOR	YEAR	INFERENCE
03	"Geofencing and Location-Based Services in Facility Management Systems"	B. Chen, L. Wang	2022	Focuses on using geofencing to ensure reports are within specific operational zones. Validates the technical feasibility of restricting reporting to defined organizational boundaries, a key feature for CivicLens.
04	"Deep Learning for Duplicate Complaint Detection in Public Service Systems"	K. Gupta, R. Kumar	2023	Investigates various deep learning models to identify and cluster duplicate complaints, significantly reducing administrative overhead. Directly supports CivicLens's AI-driven deduplication feature.

LITERATURE SURVEY:

S.NO	TITLE	AUTHOR	YEAR	INFERENCE
05	"SaaS Architecture for Multi-Tenant Enterprise Applications: Data Isolation and Scalability"	D. Johnson, E. Miller	2024	Provides insights into designing scalable cloud-based applications that securely host multiple independent organizations on a single platform. Crucial for CivicLens's ability to serve various colleges/companies separately.

PROPOSED SYSTEM :

CivicLens AI is a Multi-tenant SaaS platform designed to provide organizations with a private, AI-automated ecosystem for grievance resolution.

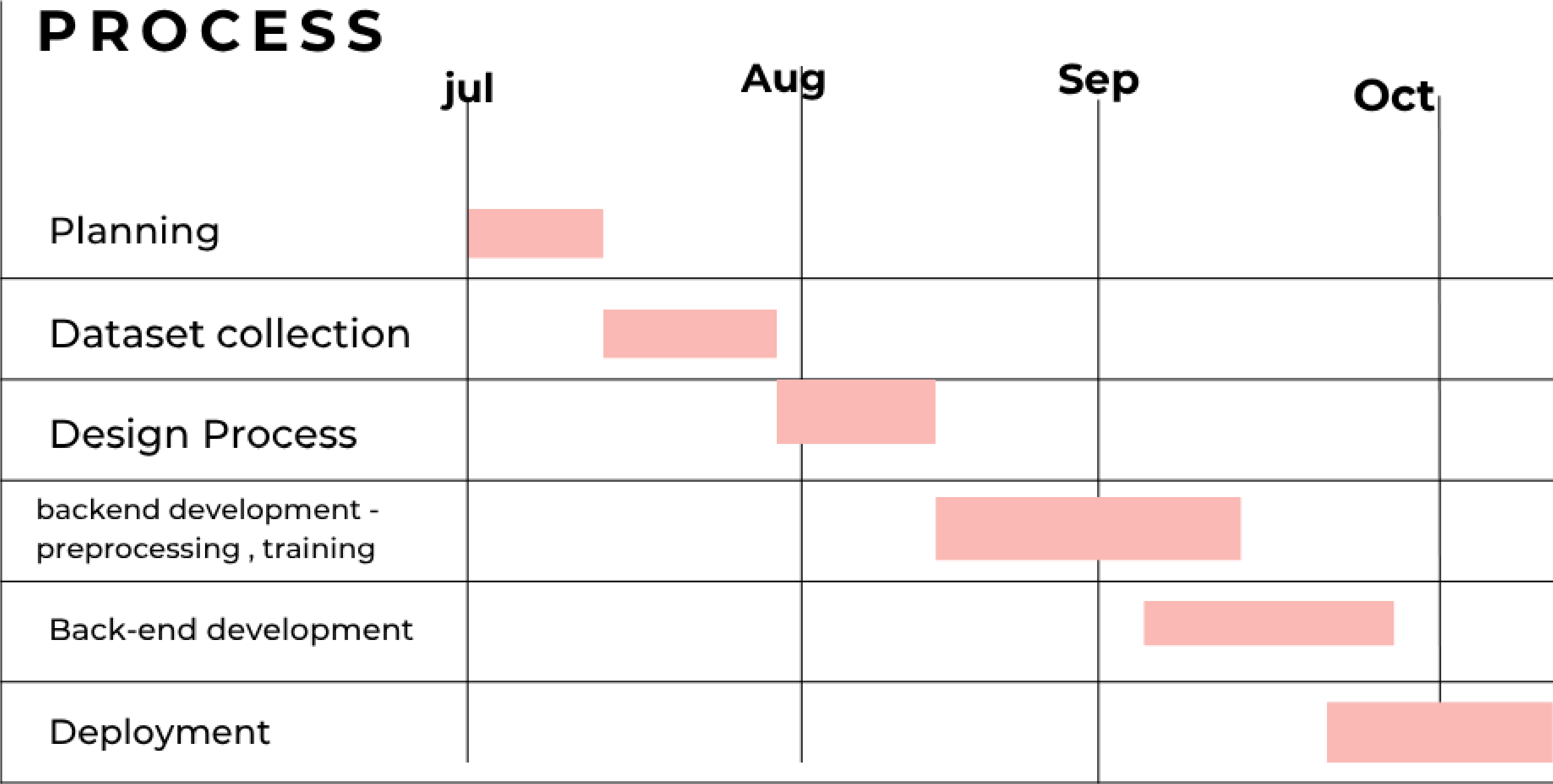
Core Features:

- Intelligent Multimodal Verification
- Geofenced Reporting: Restricts report submissions to the organization's physical boundaries (Campus/Office) using high-accuracy GPS.
- AI-Driven Deduplication: Gemini identifies if an issue has already been reported by another user in the same vicinity, grouping them into a single "Master Ticket."
- Automated Priority & Routing
- Interactive Admin Dashboard
- Transparent Feedback Loop

ADVANTAGES OF PROPOSED SYSTEM :

- **90% Reduction in Administrative Noise:** AI filters out non-issues and merges duplicates, allowing staff to focus on actual repairs rather than data entry.
- **Faster Response Time:** Real-time routing eliminates the "middleman." Tickets reach the technician's phone seconds after the student/employee hits "Submit."
- **Cost-Efficiency (SaaS Model):** Organizations don't need to build their own tech. They can "subscribe" and have a professional system running in minutes.
- **Enhanced Safety & Accountability**
- **Evidence-Based Maintenance:** Admins get "Before and After" photo proof for every task, ensuring work quality and staff accountability.
- **Boosted Community Trust:** Transparency in the "Live Tracking" status makes students/employees feel valued and heard.

PROJECT PLAN



REFERENCE

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- [2] Swarnkar, S. K., & Rathore, Y. K. (2025). "AI-Based Solution To Enable Ease of Grievance Lodging and Tracking for Citizens Across Multiple Departments." Proceedings of the International Conference on Advances and Applications in Artificial Intelligence (ICAAAI 2025).
- [3] Kumar, R. (2025). "Multi-Tenant SaaS Architectures: Design Principles and Security Considerations." Quest Journals - Journal of Software Engineering and Simulation.
- [4] Lokhande, M. A., et al. (2025). "An Insight Into Smart Infrastructure With Artificial Intelligence-Driven Predictive Maintenance: Transforming the Future of Urban Systems." Cureus Journal of Computer Science.
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- [6] Areo, G., & Adelusola, M. (2021). "Smart Campus Based on AI and IoT: Challenges and Opportunities." ResearchGate / Complexity.