AI-Powered Petition Management System

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Abstract— Governments and institutions handle thousands of petitions on a daily basis, but conventional processing is manual-dependent, resulting in inefficiency, delays, and inconsistency in decision-making. The current paper introduces an AI-driven petition management system aimed at automating categorization of petitions, identifying urgency, and duplication using Natural Language Processing (NLP) and machine learning. The system utilizes Flask for backend processing, React for a dynamic user interface, and MySQL for secure database management. The AI model, deployed with spaCy, extracts and analyzes petition content from text, PDFs, and images to provide thorough evaluation. One of the main features of this system is that it can identify critical and urgent petitions through semantic analysis and contextual understanding and prioritize them for immediate action. Moreover, redundancy is avoided by duplicate detection mechanisms, making efficient handling of petitions possible. The system increases citizens' participation by offering automatic status notifications, raising transparency and accountability in government. By streamlining the process of handling petitions, this AI system minimizes the workload of the administration, decreases response time, and promotes effective decision-making within public administration.

Keywords: Petition Management, AI Classification, Urgency Detection, Natural Language Processing, Duplicate Identification, Governance Automation, Public Engagement.