TITLE:SMART WASTE AI POWERED COMMUNITY WASTE MANAGEMENT

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ABSTRACT

Waste management has emerged as a pressing challenge in urban and rural areas, with improper disposal causing severe environmental, health, and economic consequences. Traditional systems of waste handling often lack efficiency, leading to issues such as unsegregated waste, unhygienic surroundings, and poor recycling practices. To overcome these challenges, our project introduces the Smart Waste: AI-powered Community Waste Management System, which leverages the capabilities of artificial intelligence to make waste segregation and monitoring more effective while fostering active community participation.

The system primarily focuses on AI-driven waste classification, where users can identify and categorize waste into recyclable, non-recyclable, and hazardous types with higher accuracy. This automation simplifies the segregation process, reducing dependency on manual sorting and enhancing recycling efficiency. Alongside classification, the platform provides personalized waste management tips to promote better disposal habits and create awareness among citizens.

A key feature of the project is the issue reporting mechanism, which allows users to quickly report waste-related problems such as uncollected garbage or overflowing bins. This ensures faster resolution and improves communication between the community and local authorities. Furthermore, to encourage sustainable practices, the system integrates a reward-based model, where individuals and communities earn incentives for responsible waste management contributions.

By combining AI technology with community-driven initiatives, the Smart Waste system not only supports cleaner and greener surroundings but also empowers citizens to actively participate in environmental conservation. The project emphasizes sustainability, awareness, and collaboration. The AI classifier in our system achieves an accuracy of 95%, ensuring reliable waste categorization and efficient management.

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