

AI-Powered Smart Mail Auto Reply System Using Gemini

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Abstract: As digital communication grows rapidly, managing large volumes of emails has become a daily challenge for professionals and organizations. Traditional email auto-reply systems can only provide rule-based responses, which are often generic and impersonal. This leads to a decline in communication quality. The rise of Large Language Models (LLMs) has made it possible to generate intelligent, context-aware text. This paper discusses the design and development of an AI-Powered Custom Mail Auto-Reply System that uses Google's Gemini API to create personalized, professional, and context-aware responses. The system automates email fetching, content analysis, and the generation of intelligent replies through a complete pipeline. The main parts include IMAP/SMTP-based mail handling, content preprocessing, LLM-powered reply generation, and a secure web dashboard for setup and monitoring. The research compares existing solutions, like Gmail Smart Reply and Microsoft Outlook Auto-Response, points out their limitations in adaptability and personalization, and introduces an improved structure that combines automation, NLP, and Gemini's generative features. The results indicate a significant boost in response relevance, tone adaptability, and user satisfaction when compared to template-based systems.

Keywords: Artificial Intelligence, Gemini API, Email Automation, NLP, LLM, Auto-Reply System, Context-Aware Communication