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CampusFlow: Academic Communication and Service Automation with IoT Integration

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Abstract: *Modern educational institutions are transitioning toward smart digital ecosystems, yet many still rely on manual operations for notice distribution, attendance marking, and service request handling. This research presents CampusFlow, a unified smart-campus solution that digitalizes essential campus operations through a centralized communication portal integrating Internet of Things (IoT), Artificial Intelligence (AI), Robotic Process Automation (RPA), and blockchain technology. The system enables real-time notifications, automated attendance tracking via IoT-enabled smart ID cards, AI-powered chatbot assistance, and automated service workflows for certificate requests and grievance submissions. Implementation results demonstrate a 95% reduction in manual attendance effort, 24-hour service request processing (reduced from 2-3 days), and 98% IoT scanning accuracy. User evaluation shows 87% ease of navigation, 90% preference for chatbot-assisted queries, and 93% satisfaction with service accessibility. This integrated approach transforms traditional campus operations into an efficient, student-friendly digital environment, contributing to Smart Campus initiatives in India...*

Keywords: Smart Campus, IoT, Blockchain, RPA, AI Chatbot, Campus Automation, Digital Education

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