

EduBot: A Smart AI Virtual Assistant for Personalized Education

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ABSTRACT:

Educational institutions are increasingly adopting digital platforms to enhance communication and accessibility for students, staff, and visitors. However, college websites often lack interactive support systems, making it difficult for users to quickly obtain information related to admissions, courses, events, academic schedules, and institutional services. These limitations can lead to delays in information access and increased workload for administrative support. To overcome these challenges, this paper proposes EduBot, an AI-powered chatbot integrated into a college website to provide instant and reliable assistance to users. EduBot is designed using Computational Intelligence and Natural Language Processing (NLP) techniques to understand queries and deliver context-aware responses in real time. In addition, the system incorporates Retrieval-Augmented Generation (RAG) technology, enabling the chatbot to retrieve relevant information from college databases, FAQs, and official documents before generating accurate and context-specific responses. This improves reliability, reduces hallucinated outputs, and enhances user trust. The proposed architecture includes secure access modules, a centralized knowledge base, and an intelligent intent recognition engine for accurate query handling. EduBot improves user engagement, reduces response time for routine enquiries, and enhances the overall digital experience of the college website. The implementation demonstrates that AI-driven conversational systems can significantly contribute to smart campus development by strengthening communication, minimizing administrative burden, and promoting efficient information delivery. EduBot serves as a scalable and user-friendly solution for modern educational institutions.

Index Terms—EduBot, AI Chatbot, College Website, Computational Intelligence, NLP, Retrieval-Augmented Generation (RAG), Smart Campus.