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DEVELOPMENT OF A STATIONARY INTERACTIVE ROBOT FOR UNIVERSITY CAMPUSES

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Universities require efficient, accessible and real-time information services to support students, faculty and visitors. Traditional human-operated help desks are limited by working hours, staffing and user load. This paper presents the design and implementation of a stationary interactive robot capable of voice-based interaction for campus information assistance. The system integrates speech recognition, natural language processing and text-to-speech technologies with a microcontroller-based hardware architecture including a microphone, speaker and display. A Python backend processes the user queries using cloud-based STT and NLP APIs. Experimental evaluations show that the robot achieves high speech-recognition accuracy in indoor environments and provides efficient response times. The prototype demonstrates feasibility for smart campus deployments and offers a scalable model for future automated information services in educational institutions.