UniVoice

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*Abstract*— Modern universities manage thousands of calls daily from students, parents, and faculty. Traditional front-desk systems are often constrained by limited staff availability, resulting in long wait times, missed calls, and inefficiencies. To address these challenges, this paper introduces **UniVoice**, an AI-powered voice chatbot designed as a virtual front-desk assistant for university departments. UniVoice receives inbound calls, greets callers, collects essential details such as name, contact information, and inquiry type, and either responds with relevant information or routes the request to the appropriate department.  
By integrating telephony APIs, speech recognition, natural language processing (NLP), and workflow automation, UniVoice provides 24/7 availability, reduces administrative workload, and ensures faster responses for routine queries. The system also enables automated meeting scheduling by interfacing with faculty calendars and securely storing caller data in a structured database. UniVoice demonstrates how conversational AI can modernize higher education call management, improving efficiency, accessibility, and user satisfaction.

**Keywords—** AI chatbot, university call assistant, speech recognition, natural language processing, telephony automation, UniVoice.

Introduction (*Heading 1*)

Universities serve a diverse community of students, parents, and staff who frequently require quick access to information regarding admissions, financial aid, course registration, and other services. Traditionally, these queries are handled by front-desk staff or call centers, but human resources are limited and cannot always provide round-the-clock support. As a result, students often experience delays, unanswered calls, or incomplete guidance, which negatively impacts the overall user experience.

To address this problem, conversational AI systems have emerged as a promising solution. Recent advancements in speech recognition and natural language processing (NLP) enable intelligent chatbots to interact with users in a natural and efficient manner. **UniVoice** is designed to serve as an AI-powered virtual receptionist that not only automates responses to common questions but also routes calls to the correct department, schedules appointments with faculty, and securely stores caller information for follow-up.

The primary objective of UniVoice is to improve operational efficiency in higher education by reducing the workload on administrative staff while ensuring that every caller receives timely and accurate assistance. Unlike traditional interactive voice response (IVR) systems, UniVoice employs AI-driven understanding of caller intent, making the interaction more natural and personalized. This paper presents the design, implementation, and potential benefits of UniVoice as an intelligent communication assistant for universities.