Improving Patient Access and Experience in Healthcare Systems

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Abstract
The current healthcare system is grappling with major challenges in providing efficient access to medical services for patients. Many individuals face long waiting times, even when they have scheduled appointments, which can lead to frustration and delays in receiving essential care. There is also an increasing demand for a fast and easy way to obtain medical information and timely advice based on the symptoms felt. This study seeks to tackle these problems by creating an application that combines a medical Artificial Intelligence assistant with an effective appointment management system. The AI assistant was trained to respond to general medical inquiries, propose possible diagnoses, and offer detailed explanations based on symptoms, along with initial treatment suggestions. At the same time, the appointment system aims to optimize patient flow, minimize waiting times, and ensure more efficient scheduling for consultations. The application was built using a mix of Django and Flask for backend services, React for the frontend, and SQLite for database management. The study included the design and implementation of the application, followed by testing to confirm its functionality and user-friendliness. Results show that the application greatly enhances patient access to medical services and improves the overall efficiency of appointment management. The combination of AI for initial diagnostics and the streamlined appointment system highlights the potential to alleviate burdens on the healthcare system and boost patient satisfaction. In summary, the proposed solution presents a thorough approach to resolving existing inefficiencies in patient-clinic interactions, with encouraging prospects for future advancements in healthcare.

Keywords: Medical Artificial Intelligence Assistant; Appointment Management; Patient-Clinic Interaction; Healthcare Efficiency; Computer Assisted Preliminary Diagnostics.