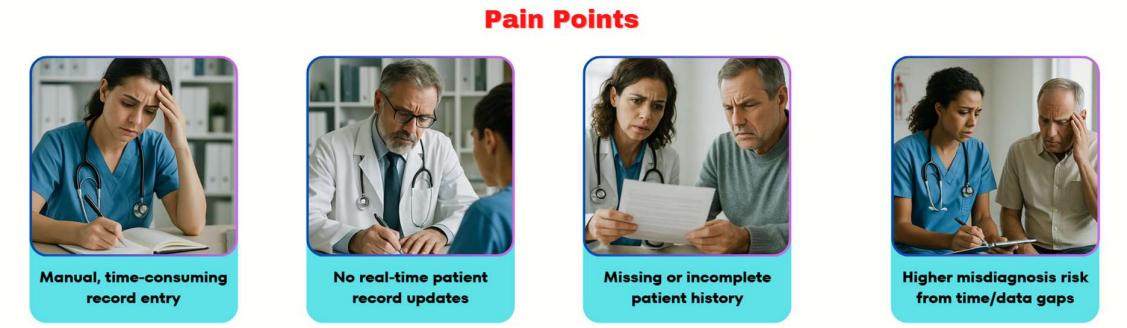
Problem Statement: Reducing Healthcare Inefficiencies with AI

Nearly 5 million Indians die due to medical negligence every year, while receiving hospital care, and diagnostic errors are a major contributor. - Business Standard

"Medical negligence - 70% of deaths are a result of miscommunication"– Times Of India

Nurses spend over 4 hours per shift on documentation, leading to severe burnout, reduced patient interaction, and high attrition rates. At the same time, doctors face the challenge of manually reviewing reports, navigating fragmented patient records, and lacking real-time clinical support. This not only consumes valuable consultation time but also increases the risk of decision fatigue and diagnostic errors. The absence of an efficient, real-time documentation and data retrieval system severely hampers both care quality and provider well-being. There is a critical need for a solution that eases documentation load and enhances clinical decision-making on the spot.



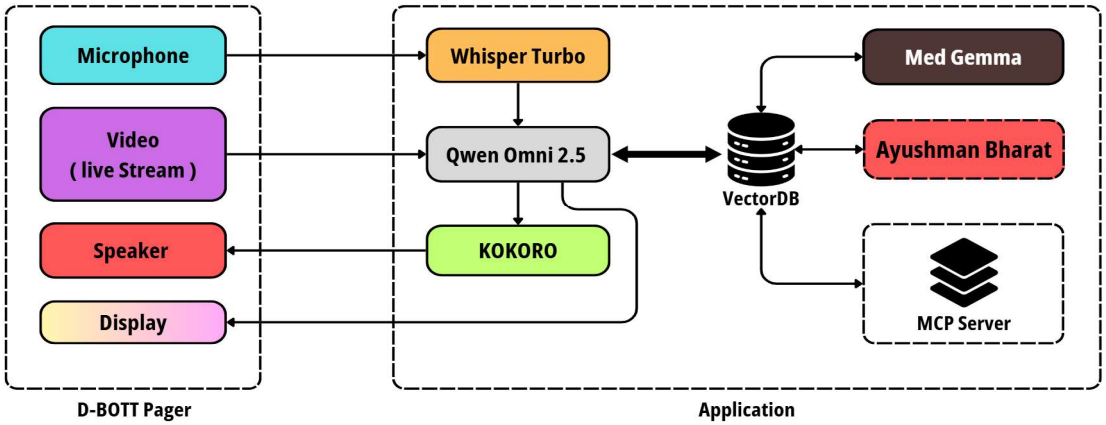
Target Audience - Doctors, Nurses and Outpatient Department (OPD) Units in Hospitals

Use of Gen-AI in D-BOTT

- **Multilingual Voice Agent:** Enables real-time voice documentation and interaction in multiple Indian languages.
- **AI Document Parsing:** Uses VLLM (e.g., Med-Gemma) to extract insights from reports, prescriptions, and handwritten notes on the go.
- **Data Interoperability:** Integrates with hospital systems via Gen-AI API parsers for seamless EMR updates.
- **Patient Profiling:** Creates visual knowledge graphs and summaries for fast, intuitive decision-making.
- **AI Clinical Assistant:** Acts as a digital twin to suggest prescriptions, prompt questions, and flag anomalies in real time.

Solution Framework:

D-BOTT , an AI-powered voice-first pager that streamlines nurse/doctor documentation, delivers real-time patient insights during consultations, and automated digital health records creation , decreasing consultation time, reducing cognitive load, and revolutionizing EMR with instant and intelligent automated workflow



Why D-BOTT Pager is important?

Project Execution of D-BOTT Pager:

Hardware: The pager form factor includes initial setup of esp32 cam integrated with inmp4401 i2c microphone and i2s speaker module. Then the module is connected to SIM900A module for wireless 3G connectivity with the remote D-BOTT hosted on custom cloud.

Software: We use websockets in order to connect the pager to cloud server to stream real time data of voice , video and sound . The application involves LLM pipelining of different voice , text and multimodal LLM seamlessly integrated with langchain and containerized by docker

Summary:

D-BOTT replaces outdated pagers with a smart AI device using a mic, camera, and SIM900I for 2G/3G connectivity enabling real-time data digitization and access even in the most remote parts of India.

MVP - https://github.com/Grimm1694/Sea-Kers_Kashvi_V_T-02025