AI-Based Communications Tool for Medical Practitioners

Tanner Hochberg, Elijah Don, Ethan Vanderpool, Ian Marcon, Alexander Roussas

Project Overview

• **The Problem**: Doctors need a better way to practice tough conversations and improve communication skills. This prevents burnout and improves patient care.

• **Our Solution**: An AI-based coach that lets clinicians improve their communication skills by providing instant, helpful feedback on real-world or simulated patient interactions.

• **Who Benefits**:
  - Doctors: Gain confidence and reduce stress.
  - Patients: Feel heard and better cared for.
  - Hospitals: Provide a higher standard of care.

Our Mission

Design an AI-powered communications trainer aimed at delivering timely, objective, and continuous feedback on conversational skills for clinicians, including trainees.

- The system will leverage natural language processing and deep learning technology to assess communication quality, with a focus on enhancing empathetic dialogue, supporting ongoing professional development, and ultimately improving patient-centered outcomes.

Current Market

- The global AI in healthcare market was valued at approximately $22.4 billion in 2023 and is projected to increase to over $208 billion by 2030 [1]. This indicates massive investment and rapid adoption of AI solutions across the industry.
- The most significant driver is scalability. AI allows training of multiple users at once helping fix issues of time and financial management.
- We also want to make sure we foster a safe and repeatable learning environment for the people who will use our product.

- Similar products to this idea do exist (Patient Communication Simulators, Bodyswaps, VirtualSpeech) but use an AI simulated environment whereas we want to potentially use this for actual patient interactions

[1]"AI In Healthcare Market Size & Outlook, 2030." Accessed: Oct. 14, 2025. [Online]. Available:https://www.grandviewresearch.com/industry-analysis/artificial-intelligence-ai-healthcare-market

Primary Stakeholders

1. Healthcare Professionals:
   - Provides physicians with actionable feedback on their patient communication to enhance empathy improving patient satisfaction and reducing professional burnout.
2. Medical Trainees:
   - Offers medical trainees objective feedback to accelerate their development of effective communication skills and better prepare them for patient care.

Secondary Stakeholders

1. Patients and Families
   - For patients and their families, this tool fosters a feeling of being heard and respected, which increases trust, satisfaction, and adherence to care plans.
2. Medical Educators and Training Institutions
   - For medical educators and institutions, this tool provides reliable data on learner progress, enabling them to scale empathy training and enhance educational outcomes.
3. Healthcare Administrators and Institutions
   - For healthcare administrators, this tool provides key metrics linking communication performance to patient satisfaction and reduced burnout, thereby improving institutional reputation, retention, and compliance with care standards.

Project Needs Statement:

A way for healthcare professionals and trainees to receive **immediate**, **objective**, and **personalized** feedback on their empathetic communication during patient interactions in order to strengthen emotional awareness, enhance patient trust, and reduce provider burnout.
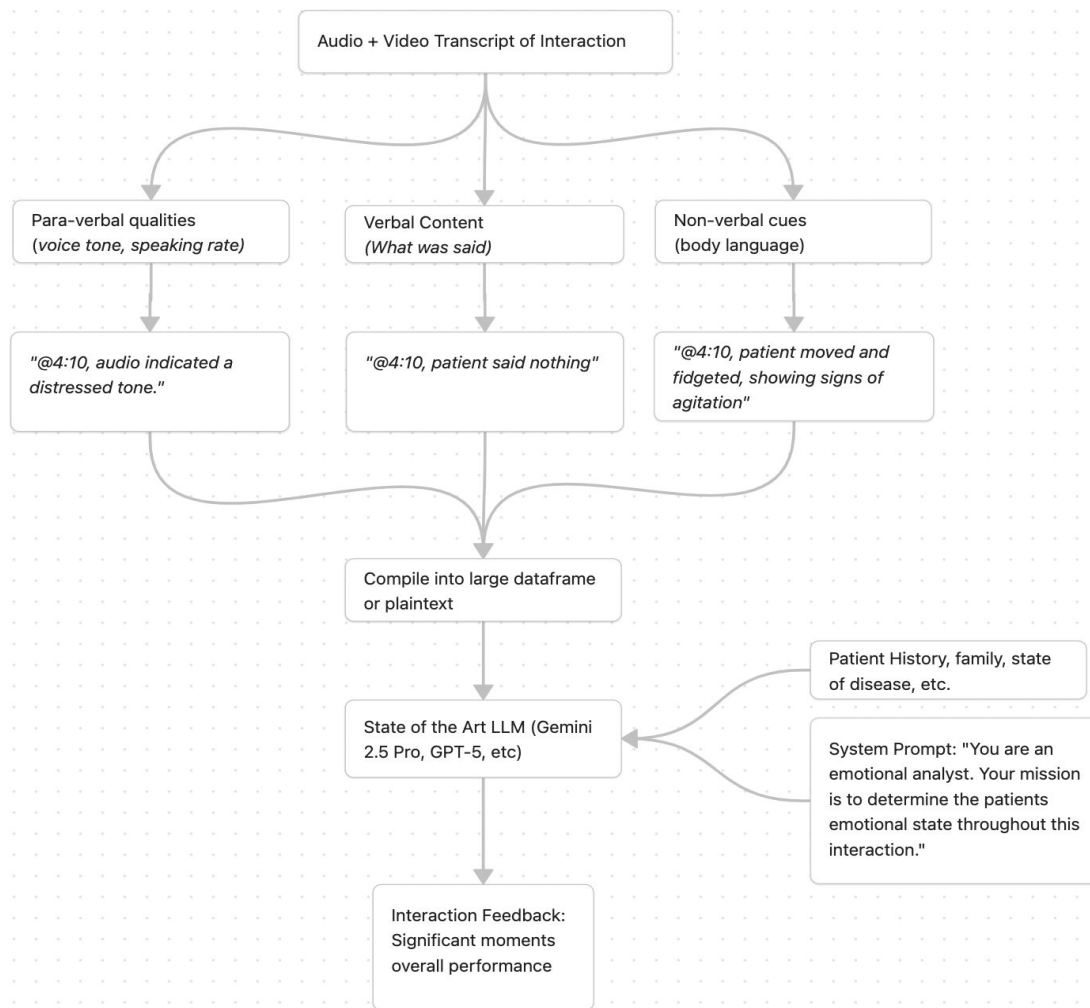
Challenges

- Acquiring data
- Labeling data
- Incorporating the senses
- Training

Future Directions

- Build a prototype
- Generate data with AI

Current workflow →

Thank you!