Vision Statement

About the Team

Company: Well Health
Project Title: SMART
Team Name: Log
Team Lead: Changsheng Su
Scribe: Jenny Aoyama
Member:
Changsheng Su (csu@ucsb.edu)
Jenny Aoyama (aoyama@ucsb.edu)
Huake He (huakehe@ucsb.edu)
Yuxiao Luo (yuxiaoluo@ucsb.edu)
Siyuan Wang (siyuanwang@ucsb.edu)

Project Summary:

An intelligent application that facilitates providing a patient the best healthcare possible. Our software helps a patient stay on top of their health with an intelligent virtual assistant that assists the patient in real time during a healthcare appointment. Our software also creates an interactive transcription for a patient to review after a healthcare appointment to make sure no details slip through the cracks.

Background

Due to the current pandemic, there has been a tenfold increase in virtual healthcare visits leading to problems such as

- Patients have a hard time keeping up with complicated medical terms and details given to them by the doctor which leads to certain things slipping through the cracks.
- Doctors also face difficulties intuitively explaining the complex medical terms and treatments which cause virtual visits to become inefficient.
- Patients do not have easy access to all their medical records including their medical history, allergies, medications.

Why are these problems important?

- Most patients find appointments stressful due to the reason they have to remember and understand all the information given to them by a doctor.
- Inefficient appointments and missed details lead to an improper treatment for the patient potentially worsening their health conditions.
- Missed details can cause a patient to spend a lot more time calling the doctor's office for follow up questions that may have already been answered during their appointment.

How is this problem solved today?

- Abridge
    - Pros:
        - It is able to understand complex medical terms and provide helpful information after the appointment
        - It is able to provide a transcription of the appointment for the patient.
    - Cons:
        - It is unable to provide assistance to the patient in real time during an appointment.
        - It is unable to provide an interactive transcription of the appointment that can be shared across the patient's electronic medical records
        - It is unable to unify a patient's multiple medical records across different healthcare providers.

Outcome

- The creation of an intelligent agent that is able to create an interactive transcription of a healthcare appointment.
- Supporting a real time speech to text transcription.
- Supporting real time support for the patient to understand complex medical terminology, symptoms, treatments with interactive links and information.

- Creating a unified platform for a patient's medical records

Solution implementation/design

- Platform: WebApp/iOS app
- Frontend: React/Swift
- Backend and database: Node.js, SQL
- APIs: OpenAI API, Medical dictionary API, Amazon Comprehend, AWS Transcribe
- Cloud server: AWS/Heroku

Milestones and how to achieve them

- Implementing a recording and transcription software that can listen on the healthcare appointment
- Implementing a third party API (Medical dictionary API) to understand medical terms in the conversation.
- Implement a user-friendly interface to intuitively explain medical jargons
- Creating a live feed between AWS Comprehend, AWS Transcribe and our application
- Set up an encrypted database to patient information and appointment information.
- Using react to visualize conversation script, medical terms, and patients allergies and medical history.
- Deploy the server and database to the AWS cloud.