

Augmentation for Behavioral Health Analysis

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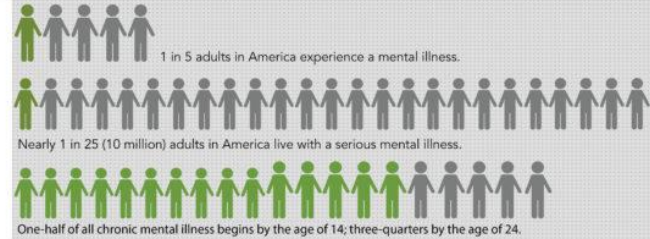


Problem

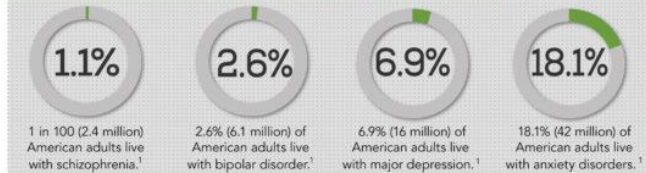
- Mental health a fast growing field
- Handle huge demand for mental health services
- Support health providers with tools for analyzing behavioral/mental health
- Need extra data and information to assist providers

Mental Health Facts IN AMERICA

Fact: 43.8 million adults experience mental illness in a given year.



Prevalence of Mental Illness by Diagnosis





Solution

The screenshot displays a video call interface. On the left, a patient is lying in a hospital bed, and on the right, a doctor is visible. A sentiment analysis bar is positioned at the top right, featuring eight vertical bars representing different emotions: Fear (green), Happiness (yellow), Trust (purple), Anticipation (orange), Anger (red), Sadness (blue), Disgust (dark green), and Surprise (cyan). Below the bars, a chat window shows a conversation with highlighted words: "afternoon. She left me an enormous bouquet. Lilacs, her favorite. I never cared for them, but I appreciate the gesture. > Yes, of course I told her that. > Ah, she was still upset, I tried to tell her that I've already made my peace. But she". The interface also includes an "End Session" button, a microphone icon, a speaker icon, and a volume slider.

- Develop a video calling web application for communication
- Using patient's video and audio as input into sentiment analysis
- Allow providers to see outputs of sentiment analysis



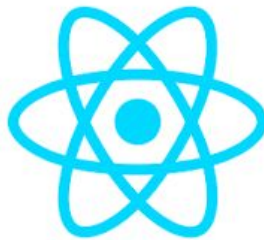
Demo





Details

- React and TypeScript frontend
- Gin GoLang backend to provide RESTful endpoints
- MongoDB to store account and session information/analytics
- WebRTC for audio/video communication between clients
- Various machine learning models for diverse analytics (face, speech, etc.)



WebRTC

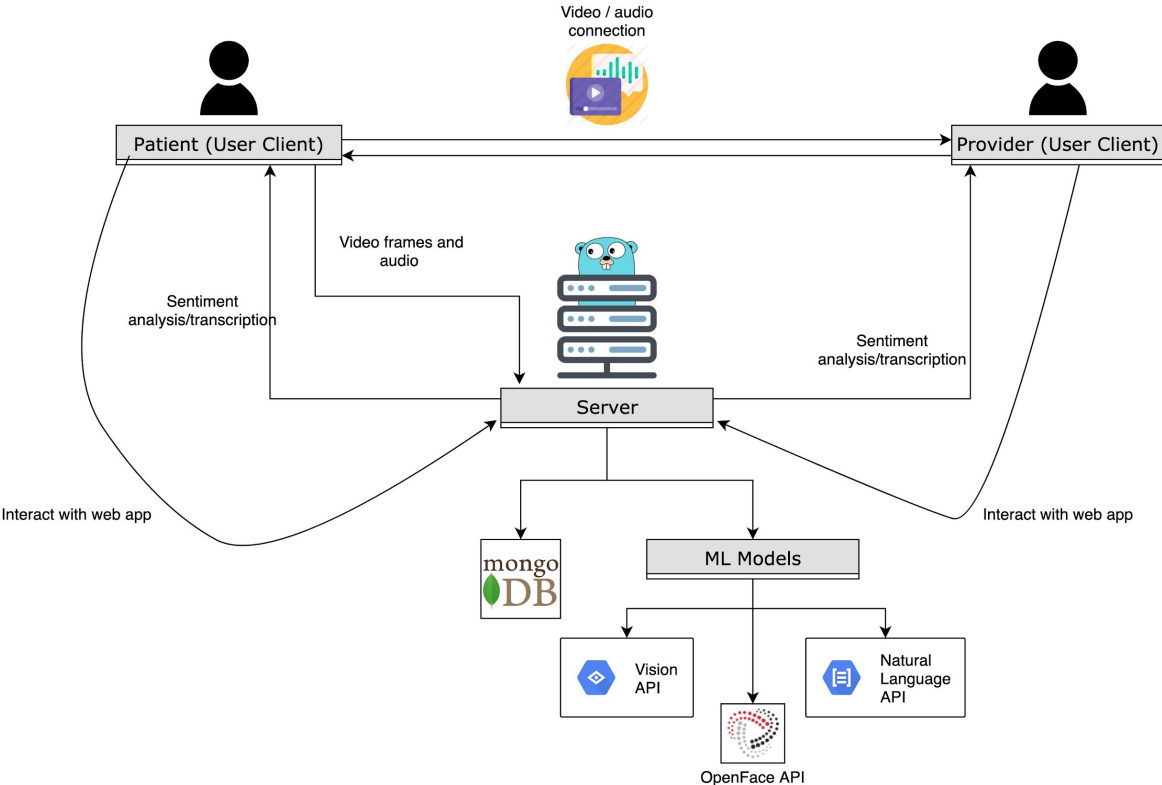
OpenFace

*Free and open source face recognition
with deep neural networks.*



Google
Cloud Platform

System Diagram





What's Next

1. Flesh out account information
2. Gather aggregate information about past sessions, potentially reprocessing video
3. Improve visuals of data analytics
4. Improve security
5. Refine peer to peer communications



Thank you!