

Detecting Emotions in Multi-Party Conversations

JACOB BELGA

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SERENA WALKER

Hannah Gibilisco: Introduction

- Stetson University 2017-2021, Computer Science
- Summer Programs:
 - Android Development at UCF (2016)
 - Cybersecurity at Stetson University (2017)
 - REU in Computational Neuroscience at FAU (2018)
- Clubs
 - Programming team, Association for Computing Machinery, Hackerspace



Serena Walker: Introduction



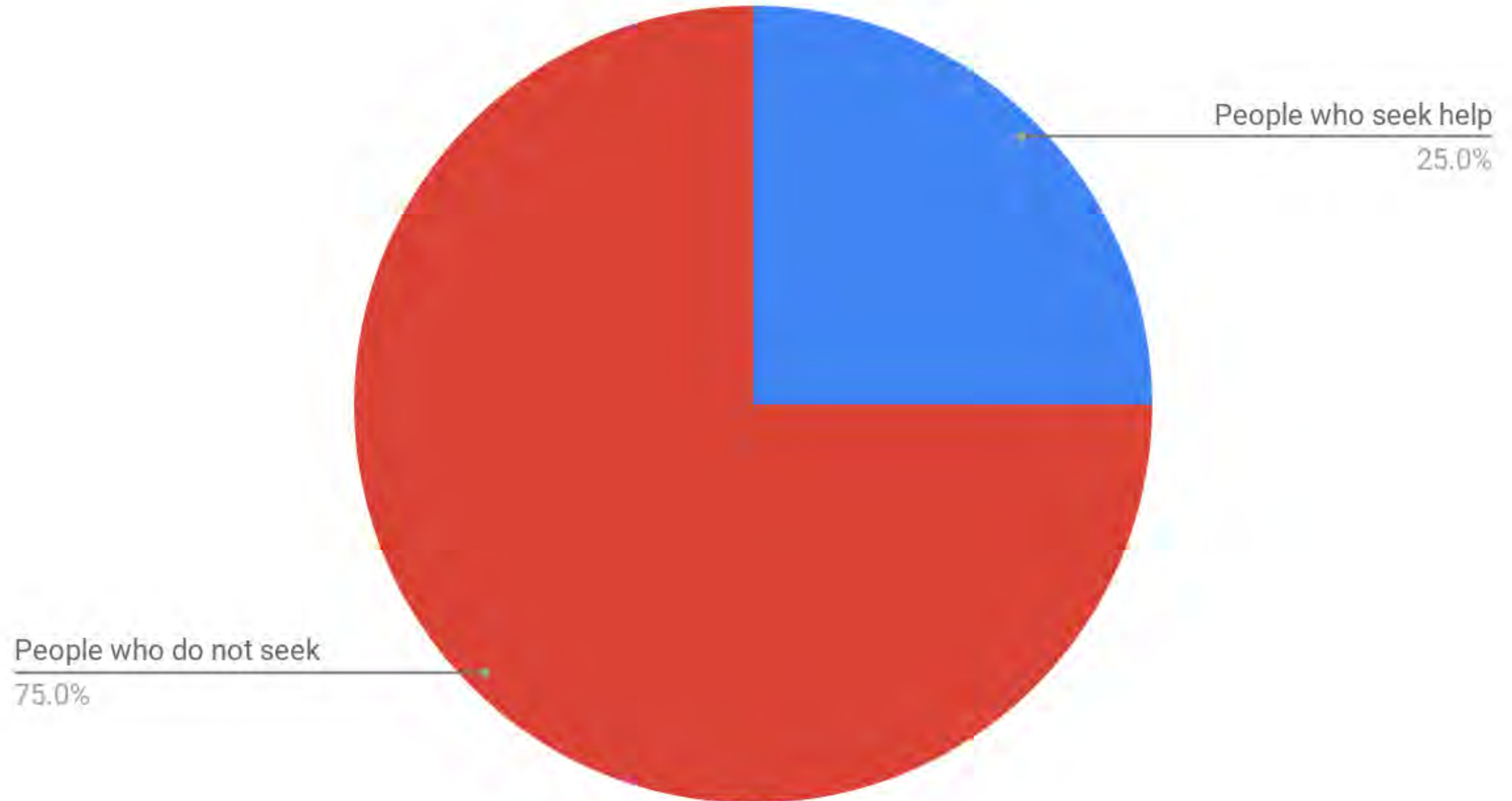
- Attending REU at FAU
 - Research on Human Computer Interaction
- On E-Board of Lean In
- Have been a TA of Intro to Programming class



Mental Health Crisis

- 200 million work days each year were lost, at an estimated cost of \$17 to \$43.7 billion
- Annual healthcare spending associated with the treatment of mental health disorders is in excess of \$57 billion
- The class of disorders ties with cancer as the third most costly medical condition in the United States
- The World Health Organization ranked mental health disorders as the third leading contributor to the global burden of disease in 2004, predicting a rise to the leading contributor by 2030

Proportion of People Who Seek Help for Mental Illnesses





Why?

Asynchronous Relationships

The background is a dark blue gradient. On the left side, there are several parallel teal lines that form a corner-like shape, extending from the top-left towards the bottom-left. On the bottom-right side, there are several parallel teal lines that form a diagonal shape, extending from the bottom-left towards the top-right. The text "How can we solve this?" is centered in the middle of the image in a white, sans-serif font.

How can we solve this?

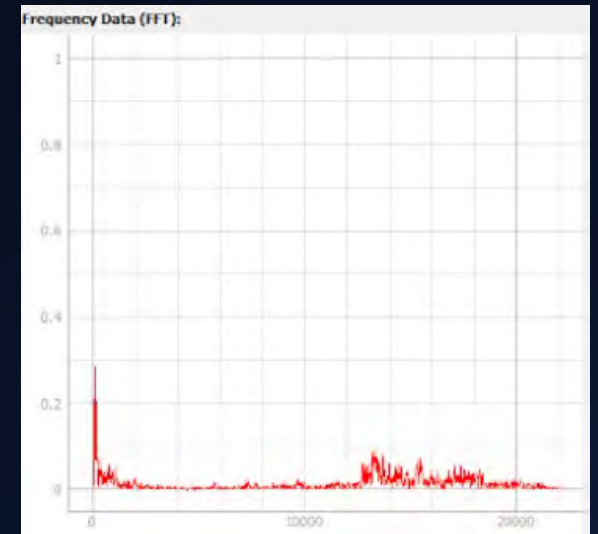
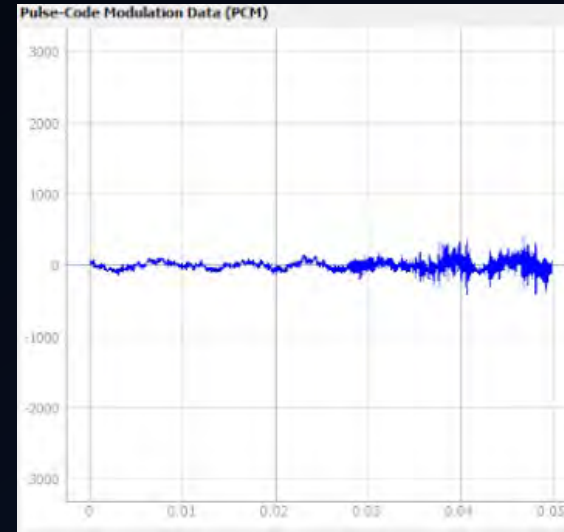
Sentiment Analysis

- Displays a transcript of individual's sentiments
- Assigns relative positivity rating
- Calculates speed of individual's speech

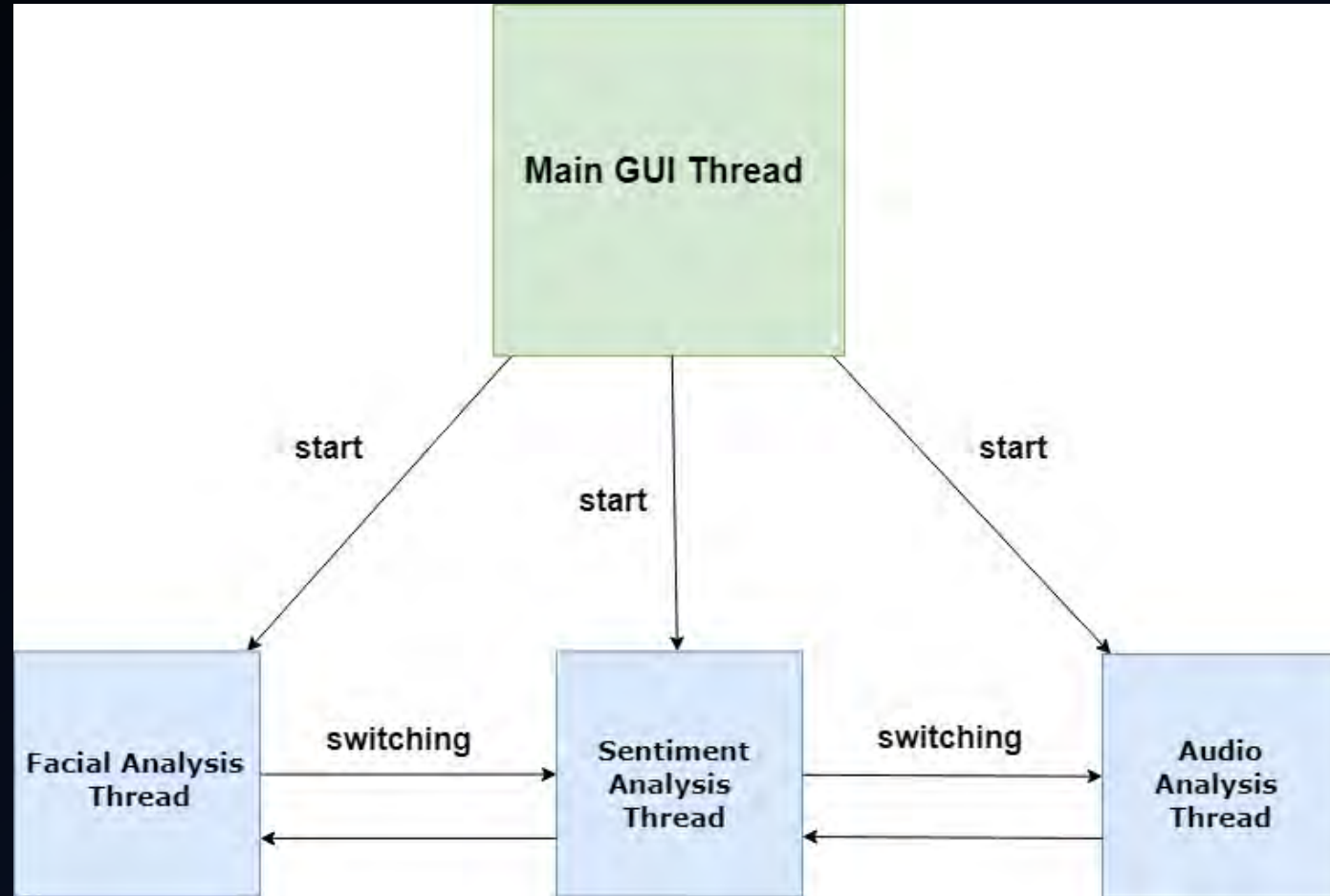


PCM and FFT

- Displays real-time intensity and frequencies
- Calculates the average intensity and frequency
- Records peak intensity and frequency over time



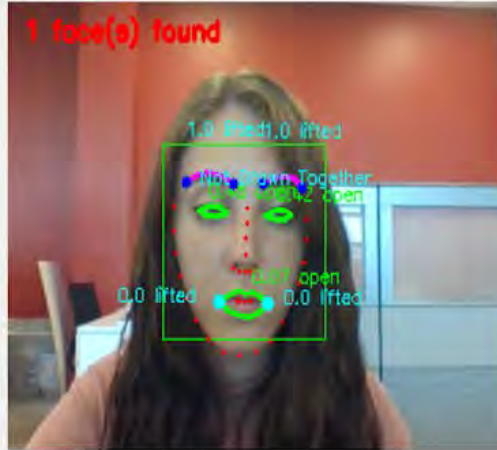
Programmatic Implementation



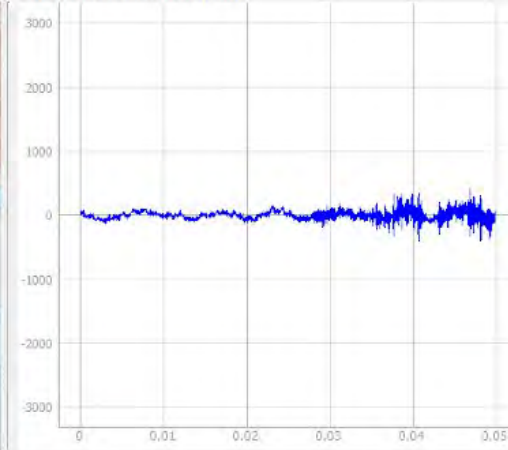
MaxFFT

MaxPCM

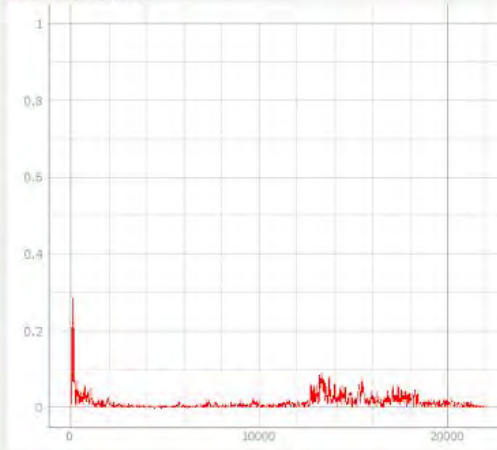
Face Detection Data:



Pulse-Code Modulation Data (PCM)



Frequency Data (FFT):



Control Panel

Pause Stream

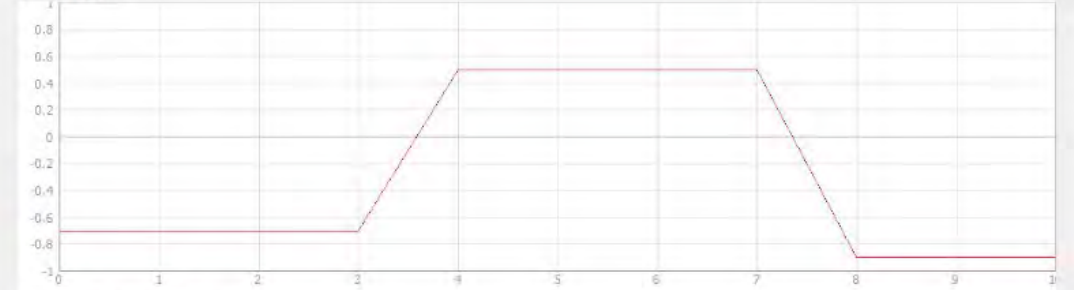
Starting...

Stop Stream

Open-Mouth Percentage

Raised Eye-Brows Percentage (left and right)

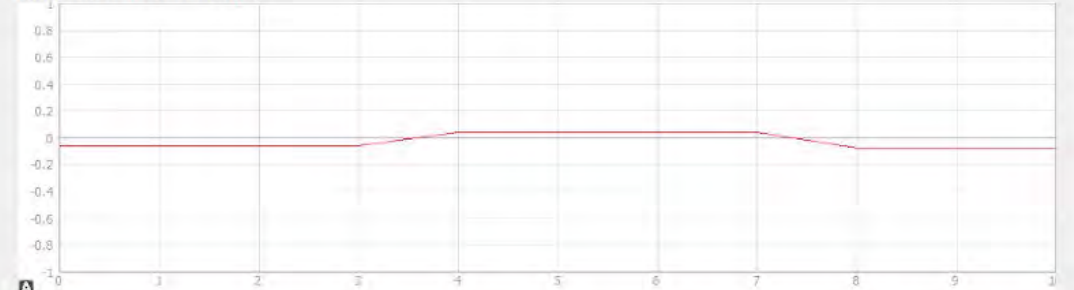
Sentiment Data



Speech-To-Text Data (STT)

your project was mediocre your project was mediocre your project was mediocre your project was mediocre your project was mediocre your project was good your project was good your project was good your project was good your project was absolutely terrible your project was absolutely terrible your project was absolutely terrible your project was absolutely terrible

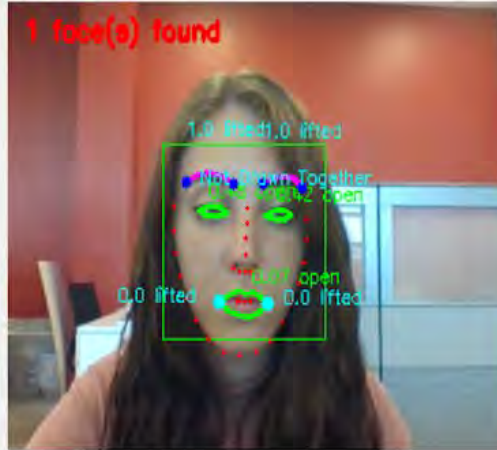
Average Compound Sentiment Rating



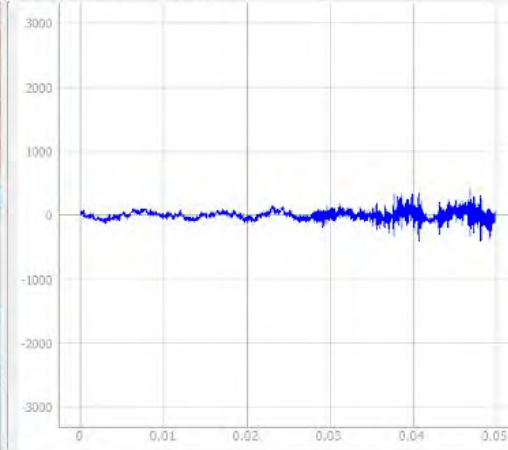
MaxFFT

MaxPCM

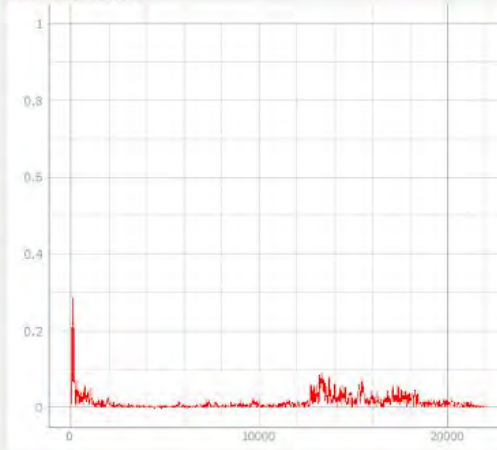
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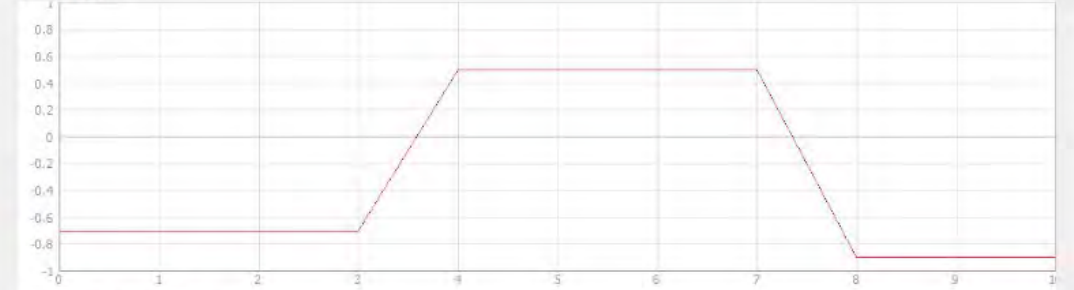
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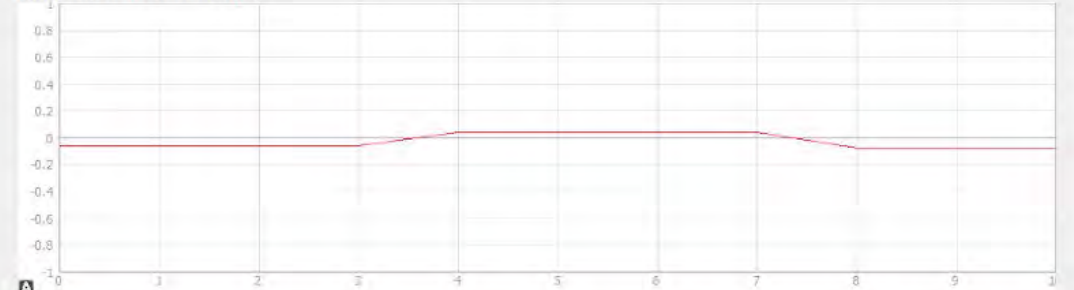
Sentiment Data



Speech-To-Text Data (STT)

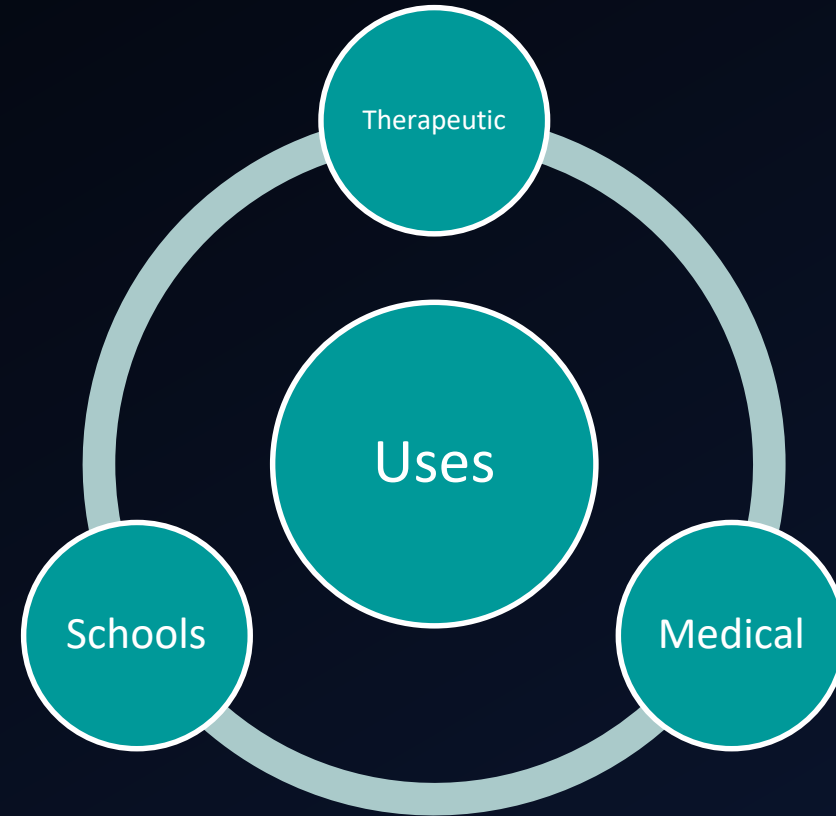
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Average Compound Sentiment Rating



Future Work

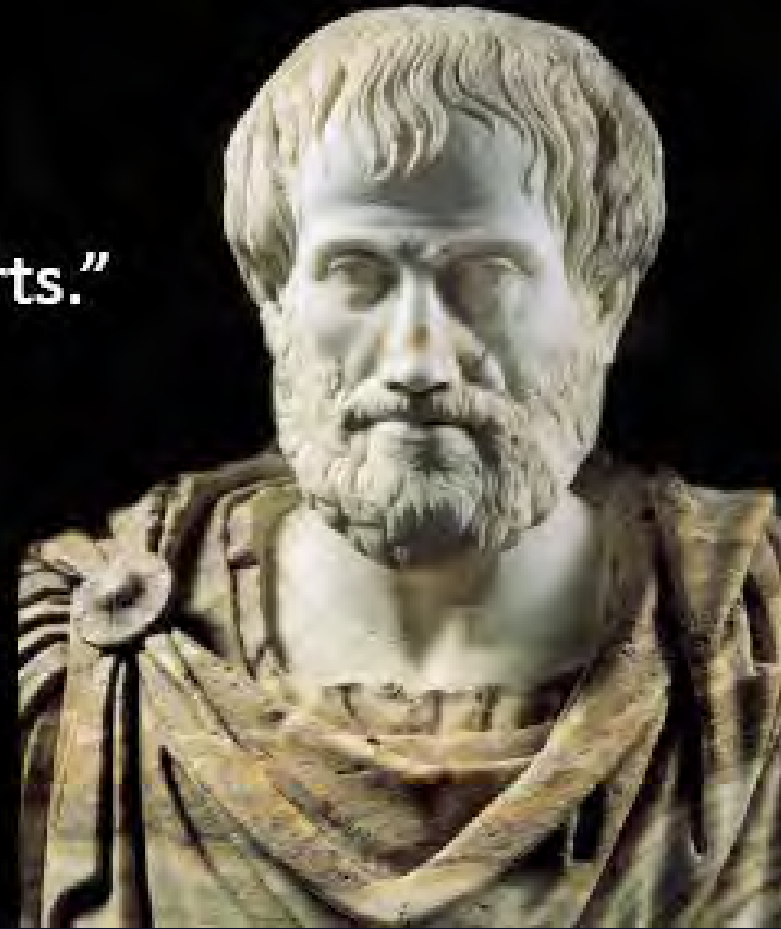
- Expand upon our neural network to include pre-recorded video and optimize efficiency
- Publish our findings
- Explore the applications of this software



So what?

“The whole is greater
than the sum of its parts.”

-Aristotle



The background is a dark blue gradient. On the left side, there are several vertical teal lines of varying thicknesses, some of which are slightly offset from each other, creating a layered effect. At the bottom, there are several horizontal teal lines that also have a layered, slightly offset appearance. On the right side, there are several diagonal teal lines that slope upwards from the bottom towards the top right corner, also appearing layered.

Questions?