ITAS 164 Assignment 2
Initiation and Planning

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February 7th 2024

Scope Statement

Justification

Through the unity of a nursing dummy, ChatGPT, Text-to-speech, and voice recognition software we will be able to create a more interactive nursing dummy that can help doctors and nurses with bedside manner or more complicated scenarios where the patient needs to explain their symptoms.

Product Scope Description

The Todd Oward Project aims to create a nursing dummy that will interface with ChatGPT and simply take user voice input, send that information to ChatGPT and then have ChatGPT's response fed to a speaker.

Acceptance Criteria

For this project to meet its deliverables we will have a system where a microphone, speaker and Raspberry Pi that will work together to take user input, feed that information to ChatGPT to generate an audible response through the speaker. All of this will be housed inside of Todd Oward in a professional and organized manner.

Deliverables

We will have two main deliverables for this project, where the first deliverable will be to create a setup for the hardware side of the project. This will include setting up our USB Mic and USB speaker to our Raspberry Pi, and how we will organize this within Tod Oward. Our second deliverable will be to create a python program that will integrate ChatGPT with text-to-speech.

Project Exclusions

The nursing dummy will most likely not be able to be turned on or off using speech-to-text (e.g Siri or Alexa). The voice recognition will only be activated from a push to talk standpoint, through the utilization of a button or the activation of the voice recognition device we chose. The dummy is not very portable as it is a very heavy object. It cannot be moved around with ease so it is most likely a stationary dummy.

Constraints

Potential constraints could be the user side of things. At these early stages, we are unaware how accurate the voice recognition is going to be. Access to high quality training data for voice recognition is also going to be a challenge for our robust text to speech model. A notable variable is also the ability for the voice recognition to understand accents. We are aware that a majority of voice recognition data will be trained on native English speakers, therefore we will have to do some workarounds for a higher user pool that is going to use Todd Oward.

Assumptions

We will be building this voice recognition system based on the assumption that variables such as background noise are to be kept at a low level. We are under the assumption that each individual who is participating in the project will have adequate technical competence to put Todd Oward together through teamwork, and we are hopeful that language proficiency will be a minimal factor during interactions with Todd.