ITAS 175 Lab 03
Project Ideas

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Project Topic

Have you ever looked at the back of the class room and seen a creepy nursing dummy? Did you wish that dummy was just a little creeper and could talk? Well in this Project we will aim to give Todd Oward a voice of his own using chat GPT, text-to-speech software and Voice recognition software.

Needs Analysis

The Goal of this project will be for educational purposes to get a better understanding of how to utilize LLM, Coding, software and hardware all together to complete our project's task of bringing Tod Oward to life. A real world application of this could be for nurses and doctors to have a LLM patient that would be able to voice concerns or help practice aspects of bedside manner. The market place has a plethora of voice based services with the top being Alexa or Siri our aim is not to compete with these top market makers but to make our own unique ITAS iteration.

Technology Background and Resources Available (3 group members)

Required Components

- Tod Oward
- Raspberry pi
- USB Microphone
- USB/Bluetooth Speaker
- Power button
- USB bluetooth adapter
- Ardino (if decided that we want lights or movement)
- Servos motors (if decided that we want movement)

Stakeholders

We are hoping to gain sponsorship from the wonderful ITAS faculty who when this project completes will have a functional mascot that can be used to promote and intrigue other potential students to join this program. Our main Client base will also be ITAS faculty and students who will be able to communicate questions and always have someone to talk to within the classroom.

Key Tasks

The major tasks to be completed in this project are to create a python program that will integrate text-to-speech and chat GPT and utilize hardware such as the raspberry pi and USB mic and speaker to create our very own ITAS voice based service

Milestone 1: To be completed by the end of February

The first MIlestone of this project will be to create a basic program using python to integrate text-to-speech, voice recognition software, and chat GPT.

Milestone 2: To be completed by the end of March

The second milestone would be to utilize the raspberry pi and create a setup that will use our usb mic and usd speaker to give Tod Oward the ability to speak and listen to what we say and then respond.

Division of Labor/Resources

With a group of three members each person will contribute to all aspects of the project as needed. The project will have two group members who will be working closely with the coding aspect of the project researching the best methods and software to be utilized. The Other member of the group will be in charge of handling the hardware and how we will utilize and organize the design that will work for Tod Oward's body.

Potential Limitations and Risks

Listed below are some Risks and limitations

- Could be a hard project for a non-code savvy group
- Organizing hardware within Tod Oward might be harder than expected
- Work might take longer than expected
- Could be Limited by chat GPT functionality
- Could be Limited by text-to-speech software

Requirements for a successful solution/product

For this Project to be successful Tod Oward's will be able to translate human dialog using text-to-speech software and then utilize chat GPT to come up with a response. That response will then be read out loud through a speaker using text-to-speech software.

References and Resource Links

Here is the Initial inspiration for the project that gives a good overview of the things that might be needed such as hardware and software and gives a good scope for the project.

Team Group 5: Addison Cahill Waller. “Debuggy Ducky.” *Hackster.Io*, 15 Dec. 2023, www.hackster.io/group-5/debuggy-ducky-bf1a01.

This Citation was used for follow up research to see different variations of the DeBuggy Ducky project. This Citation also has a good guide for the coding aspect of this project and could be helpful for starting this project on the right foot

“AI Assistant Robot with Arduino and Python.” *Projecthub.Arduino.Cc*, projecthub.arduino.cc/ashraf_minhaj/ai-assistant-robot-with-arduino-and-python-ff8980. Accessed 17 Jan. 2024.