

Journal Report 11

11/24/19 - 12/8/19

Sarah Gu

Computer Systems Research Lab

Period 2, White

Daily Log

Monday November 26

Set up the Github page for Khushi and I on the TJ Research shared Github. Uploaded my previous code that I had been pushing onto Git and linked another remote address onto Terminal so I could push to two different repo's with one command.

Monday December 2

Began creating an interface for the camera, computer, and Raspberry Pi. Looked into using Tkinter and read some articles on how to integrate OpenCV with the Tkinter module.

Tuesday December 3

Successfully set up the camera to open through the Tkinter module rather than OpenCV. This meant changing around some of the while loops in my code and implementing the Tkinter required methods for video stream. Used the Grid layout to allow for the addition of buttons later. The image was showing a blue tint at first, but I realized that Tkinter supports RGB coordinate while OpenCV supports BGR. Fixed with a `cvtColor` method in OpenCV.

Thursday December 5

Added in four different 'move' buttons, one for up, down, left, and right. Khushi is still waiting for her motor equipment to arrive, and I am waiting for her to provide me the code to use with `gpiozero` upon each button press. Encountered an issue where the video stream would stop once the button was added (ie the button was the listener and background processes were halted). Fixed with some research and rearrangement of the code.

Timeline

Date	Goal	Met
Today minus 2 weeks	Learn how to control motors through the GPIO pins	Yes, I found gpizero, a possible solution to the problem. This package gets me closer to meeting my winter goal
Today minus 1 week	Wirelessly send signal from computer to the Raspberry Pi	Yes, the remote connection between my laptop and the Pi was successfully established
Today	Begin working on creating an interface that allows users to control the motors on the computer	Yes, I have a very basic interface set up.
Today plus 1 week	Improve the graphics of the interface	
Today minus 2 weeks	Research ways to have the motor reset the Perplexus back into the start position.	
Winter Goal	Send signal from Camera to Computer to Raspberry Pi GPIO Pins	

Reflection

I am getting to learn new things about displays and GUI's on Python. The basic interface set up is helpful in that it should be easier to implement design changes now that the bulk of the setup is complete. I am looking into the ttk sub-library in Tkinter, which provides some more enhanced graphic design features. At the moment, all of my coding is done without the iPhone and Pi set up for convenience, but it may be a good idea to conduct a full test run of the program in the coming weeks.