Python Based Video Chat

Advisor: Randy Appleton

Committee: John Sarkela and Hadi Shafei

For my senior project I want to create a video chat using python. I will most likely also use a web framework such as Flask to make it a web-based application. In short, my goal would be allowing users to access a web page and be part of a video chat. I would aim to enable not only video, but also audio and text-based chat functionality.

I will need to tackle a number of things, some even before thinking about beginning the project. I will also have to learn a number of things to be successful with this project. Some of them being:

1) **Python**. A language I have little to no experience with. I'll have to learn it to program with it. This whole project will be a learning experience so I thought it a good idea to learn an extra skillset while I'm at it.

2) **Visual Studio Code**. I'm choosing to move forward using this IDE after doing some research. The SSH compatibilities should be helpful.

3) **Flask**. Flask is a micro web framework. It will help me make my project into a web application.

I will also need to incorporate libraries into my project as well. As of right now I'm not completely sure which ones I'll need to include. I'm researching which ones will best gain me video and audio functionality. As of right now I'm thinking I'll take advantage of OpenCV (Open Source Computer Vision Library) but this could change.

You could say the past 18 months have given me inspiration for this project. Before the COVID-19 pandemic I never really used any video conferencing applications. After it became the new norm I started to wonder how hard it would be to create my own barebones version of a video chat client. So, I came up with this idea. I chose Python as the language to do my project in for a few reasons. It has many features and libraries which will aid me along the way. However, one of the bigger ones is that I feel adding it to my skill set will make me that much more marketable to future employers with how popular it has become.