

Vidur Sanghi 112 Term Project Proposal (TP 3)

1. Project Title and Description

The name of the term project and a description of what it will be. Your description must be a paragraph or two, including as many specific details as you can in that space. That said, please keep this brief and to the point. Please include a couple of pictures if that helps.

Title: Color Blind Transform

Description:

The purpose of this project is to create a tool which will ingest an image and transform it so that it appears clear to a color blind person. Specifically, this tool will start by giving users an assessment that will evaluate what kinds of color blindness they have, so that the application only transforms colors that users actually have trouble seeing. After the assessment, the application will apply a number of algorithms that the user can adjust in order to enhance the image for the user.

As someone who is colorblind, I have experienced some of the troubles, although small, and a tool like this would be interesting to implement. I think an actual implementation could be a collaboration with a company like Meta on their Orion glasses, which have a built in screen and camera point outwards. The built-in screen could transform colors specific to users and their relative view of colors, so that they could see colors the same way as people who are not color blind.

2. Similar Projects

Identify between 2 and 5 similar apps or projects, either in the TP Gallery or online or in the Apple or Google play stores. You need to study these apps and list a few features from them that you think may help inspire the design of some parts of your app.

Color Blind Pal

- Has an option to transform an image based on user input
- Users can specify how much to transform an image
- The purpose of these features are to allow users to transform images so that they can differentiate between objects in an image that are similar in color

Color Name AR

- Labels names and rgb values of colors based on which part of the screen the user selects
- The purpose of this is so that users can input images after they've been taken and identify colors

Color Blindness Test

- Gives users a test and determines what kind of color blindness they have

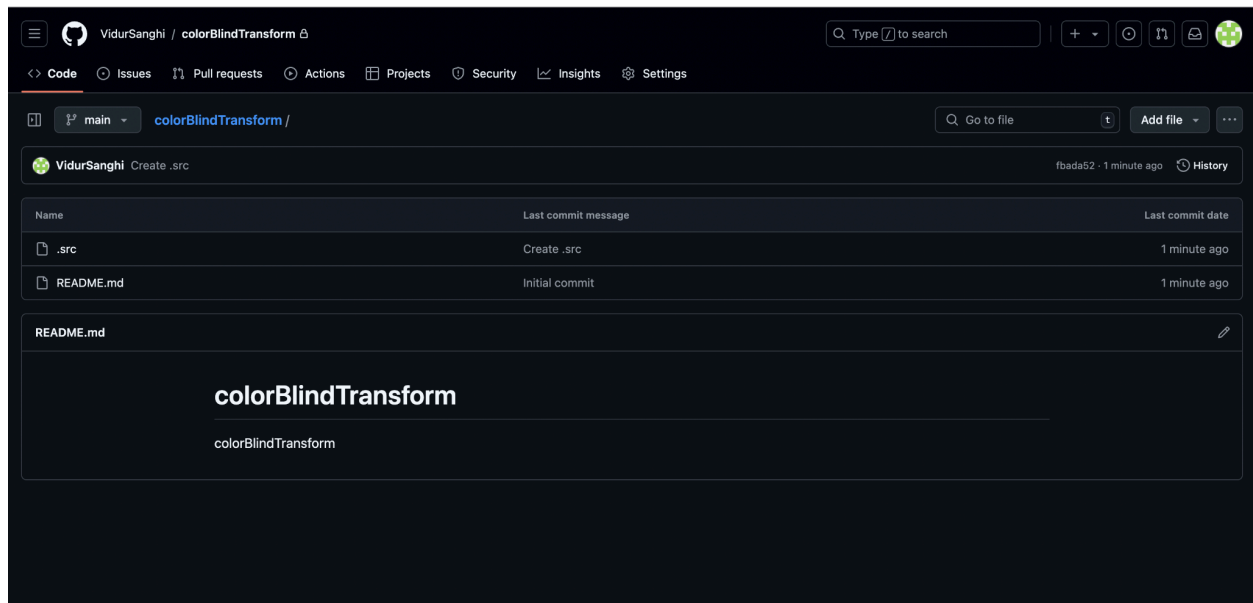
Chromatic Vision Simulator

- This app is most similar to my project, as it ingests an image and allows users to transform it manually or does it on its own based on a standardized test
- The app was created based on research by Medical Science Ph.D. Dr. Kazunori Asada.

3. Version Control / Backup Plan

Include a short description and image demonstrating that you are using version control or in some reasonable way backing up your code regularly (daily, at least). Note that your backups must not be on your computer (in case something happens to it). Ideally, store your backups in the cloud (Google Drive, a private git repository, etc).

I plan on using a private git repository to store all my files that I will be editing through VS Code on my computer. I plan to push code at the end of every editing session so that at least work up till each day is stored in the case of an issue.



4. Tech List

Include a list of all external modules/hardware/tech you are planning to use in your project. Note that any such modules must be approved by a Tech Demo. If you are not planning to use any additional modules, that's fine, just say so!

After getting a go-ahead on TP2, I implemented an image to rgb and rgb to image transformation using Pillow and Numpy.

5. Storyboard

