Jerret Stovall

CS 3150

Midterm Project

Dr. Feng

**Design:**

First, I decided that I needed perform a gamma correction by analyzing the LUV version of the photo and altering it such a way that the pixels I wanted to detect would stand out the most.

I then use the demo code given to us to detect the pink and yellow footholds in the gamma corrected image obtained from the previous step.

From there I convert the color detected image into gray scale so I can begin performing image enhancement using erosion to git rid of any stay pixels that may be floating about.

After that is done, I move on to using morphological tools, opening and closing specifically. This step helps smooth out and close any gaps that may cause the convex hull operation that I perform later to draw around.

After all that is done, I call the convex hull operation to circle all the detected footholds in the enhanced image obtained from the previous steps and place them on the source image.

**Advice for children who like to climb:**

1. Always secure your footing before reaching for a particular hold.
2. Rubbing chalk on your hands makes it easier to grip the hold you are reaching for.
3. Try to stand on the bigger footholds and reach for holds that you can put your whole hand around when pulling yourself up.
4. Have fun no matter what!!!

**PROGRAM OUTPUT:**

Diagram

Description automatically generated

A picture containing graphical user interface

Description automatically generated

Graphical user interface

Description automatically generated with medium confidence

Diagram

Description automatically generated

Graphical user interface, application

Description automatically generated

A picture containing graphical user interface

Description automatically generated

Diagram

Description automatically generated