CSC443 Sprint 3 Report - Max Figura - 2025/04/17
Group 7 Semester Project - Computer Vision

Tasks Completed

- Fixed Display Issues: Added file path truncation and spacer items to GUI
- Incorporate Color Range Selection: Added option for second color numerical input, used Jason's color space visualisation to display selected range.
- Add RGB/HSV Input Toggling: Added option to enter numerical values according to HSV model.
- User Selection of Object Location in Image: Added 'point picker' to select a point from the input image when in contour mode.

Tasks In Progress

- Color Range Input Clean-Up: Need to account for range image render times, perhaps add sampling for second color
- Contour Point Selection Clean-Up: Need to fix offset that currently has hard-coded workaround; clean up display

Tasks Pending

- Video Displaying and Processing
- Formalise UI Tests

Challenges

- Two out of three weekends this sprint I was attending events in a capacity that limited my ability to contribute to the project. My schedule over the course of the final sprint should be more conducive to supplying the necessary amount of effort.
- Mouse position is given as an absolute screen position, but widget positions are given relative to the window. Even when combining the widget position and window position to find mouse postion relative to the widget, there is an offset of unknown origin of 28px. This is currently being compensated for with a hard-coded counter-offset, but the cause still needs to be investigated to better ensure cross-platform consistency.
- plot.py color space visualisations take several seconds to render and exhibit a minimum readible size. The two-color selection interface may need to be reworked to display both colors individually and have the user choose when to render the range map.

Outcomes

- Further development to `user_interface.py`, including display cleanup, detection mode toggling and addition of point picker, and incorporating changes to `gui_colorpicker.py`.
- Further development to `gui_colorpicker.py`, including adding RGB/HSV input toggling and color range selection/display.
- Minor changes to `main.py`, including cleanup of inputs passed to analysis functionalities.

Resource Allocation

- 4 hours adding color picker functionalities
- 4 hours adding contour point selection and other UI changes
- 1 hour consulting resource documentation
- 4 hours managing team and updating project documentation

Team Assessment

- Ariana - Finished initial contour detection, with centroid calculation and point-based object selection. Started video frame processing
- Jason - Improved visualisation and file-saving methods. Tuned model for color range detection.