Biweekly Report No. 5

Artwork Super-resolution Scanning Application

MM/DD/2023 – MM/DD/2023

Isaac Plambeck • Reece Dodge • Samuel Schaphorst • Garrett Powell

Client/Advisor: Dr. Thomas Daniels

Biweekly Summary

As we continue developing core components of our application, we are starting to see glimpses of cohesion. Development of the user interface has been key, where process flow and theory will be accessible to the user base.

Past Weeks' Accomplishments

As a Group

- Figured out who should work on what algorithm

Isaac – *Software Development Lead*

- Worked on new UI for application and Perfecting Cropping Algorithm

Reece Dodge – *Project Lead*

- Continued research of super-resolution scaling techniques in existing Python libraries

Samuel Schaphorst – *Testing/Quality Assurance Lead*

- Gathered new data with printed ArUco markers on corners
- Edited median algorithm to take in more than two photos

Garrett Powell – *Electrical Design Lead*

- Created a baseline algorithm to utilize all four pantone cards and weight them based on each pixels distance away from the cards

- Slightly improved consistency of detecting ArUco makers on the pantone cards by altering the detection parameters

Pending Issues

As a Group

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Isaac

- None

Reece

- None

Samuel

- none

Garrett

- Pantone detection is sitting at around ~90-95% detection rate on initial test images. It is anticipated that the rate would increase with a higher quality camera.
- Color correction takes my computer around 3 to 4 minutes to process one image. Might take longer on older/lower end computers.

Individual Contributions

Team Member	***Contributions***	***Hours - This Week***	***Hours - Cumulative***
Isaac Plambeck *Software Development Lead*	• UI work • Algorithm for cropping work • Perspective work	5	25
Reece Dodge *Project Lead*	• Continued research of super-resolution scaling techniques in existing Python libraries	4	18
Samuel Schaphorst	• Median algorithm edits • New physical data collection	6	25

Testing/Quality Assurance Lead			
Garrett Powell *Electrical Design Lead*	• Created baseline algorithm to utilize all four pantone cards in color correction • Improved pantone detection consistency	10	36

Comments and Extended Discussion

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Plans for the Upcoming Weeks

Isaac

- Finish UI Work quickly and then Put together my code with others code.

Reece

- Implement several super-resolution scaling techniques in testing framework

Samuel

- Help with combination of all algorithms
- Begin testing program as a whole

Garrett

- Attempt to improve consistency more in pantone detection
- Attempt to speed up color correction
- Make finalizations to color correction

Summary of Weekly Advisor Meeting

No meeting this week.