SE / CybE / CprE / EE 492 - sdmay23-04

Engineering Art

Weeks 1-5 Report

01/17/2023 - 02/18/2023
Client & Faculty Advisor: Rachel Shannon, Industrial Design & Electrical Engineering

Team Members:

Derrick Brandt - SE, Researcher, Figma Wizard
Ayden Boehme - CprE, Researcher
Tomas Elias - SE, Researcher, Note Organizer
Elizabeth "Liz" Fransen - SE, Researcher, Communications Guru
Shelby Murray - CprE, Researcher, Notetaker
Juno "Winter" Robertson - SE, Researcher, Android Expert
Cosette Thompson - EE, Researcher, Electrical Expert
Nathan "Nate" Underwood - CybE, Researcher, Security Expert

Parker "Park" Smith - Consulting Industrial Design Student

Weekly Summary

Upon the arrival of the Muse 2, we were able to access the data through the manufacturer SDK and begin testing the sensitivity of the device. Independently, we plan to continue our research into art generation and AI and bring demonstrable outputs within the next few weeks.

Weekly Advisor Meeting Summary

Throughout the beginning of the semester, we've held multiple brainstorming sessions over the exact implementation of our art generation and how to best set up the interactive exhibit. We've nailed down many of the details and have plans to determine the best courses of action for our other necessary decisions. We also met with Johnny DiBlasi of the College of Design, who is currently conducting research in a field similar to our project. Our meeting with him provided several art and artificial intelligence resources that we plan to explore.

Past Accomplishments

Week 1:
- Requested Muse 2 through ETG - Cosette
- Contacted Parker Smith, a student in Industrial Design - Cosette
- Prepared for design review meeting
- Organized 491 and 492 semesters separately in shared Google Drive - Tomas
- Organized weekly scheduling of meeting room in SIC - Liz

Week 2:
- Parker Smith added to Discord - Cosette
- Digitized diagrams in Figma - Tomas
- Planned additional required research into music genres and licensing
- Decided programming languages to use for each part

Week 3:
- Gitlab repository setup - Liz
- Submitted design review assignment - Tomas
- Researched music genres - Tomas
- Planned research into available AI
- Scheduled meeting with Professor Johnny DiBlasi of College of Design - Liz, Juno
- Contacted ETG about a server - Tomas
- Planned research into cybersecurity risks - Nate

Week 4:
- Met with Professor Johnny DiBlasi- Liz, Juno, Nate, & Shelby
  - Discussed relevant artists and AI
- Researched music licensing and fair use - Nate & Shelby
- Researched music genres - Shelby
- Planned deep dive into ethics, specifically involving AI art
- Set up Muse 2 and SDK - Juno, Cosette, & Park

Week 5:
- Planned several meetings:
  - Take apart TeeVee and test - Park
  - Create program to export/import data to the Muse 2 - Liz & Juno
  - Test Muse 2 sensitivity - Tomas & Park
- Planned research and testing into generation algorithms/AI:
  - 3D cityscapes - Juno
  - 2D fractals - Liz
  - 2D AI (M5JS, wekinator.org) - Tomas
- Worked on wireframe diagrams - Derrick
- Decided on music genres: classical, jazz, pop rock, rap
  - Decided on to use three songs for each genre
  - Decided to use headset, but requires testing

Individual Contributions

Name	Individual Contributions	Hours per Week	Hours Cumulative
Derrick	- Worked on Figma wireframe diagrams - Research on art generation/AI - Catching up on project details New to project as of partway into this semester.	3	15
Ayden	- Research on effects of different music genres - Research on generation/AI algorithms	2-3	13
Tomas	Start research into 2d AI introduced by Professor DiBlasi	3-4	15

	● Testing Muse 2 sensitivity		
Elizabeth	● Contributed to development of Muse file saving and syncing. ● Scheduling of meetings. ● Introductions with Professor DiBlasi and communication with him. ● Start research into 2D fractal research	3-4	15-20
Shelby	● Take notes during meetings ● Research on music genres and licensing ● Research on generation/AI algorithms	3	15
Juno	● Research into visualization methods ● Experimented with Muse 2, got test app running, extracted saved data from app files.	3	15
Cosette	● Facilitated purchase of Muse 2 ● Communicated with and completed introductory Out of town for part of the discussed time due to family emergency.	3	15
Nathan	● Research security and privacy issues. ● Research standards ● Started a risk matrix	3	15

Pending Issues
- Begin work on process book
  - Identify medium/software to use
- Keep track of all contacts reached out to

Plans for the Upcoming Week
- Improve synchronization of Muse files
- Allow Muse file playback for development
- Export Muse data as CSV instead of Muse files for Parker

- Continue research into art generation and AI, demonstrating when able
- Reach out to Ben Blakely with regards to security and privacy in relation to AI and user data

Additional Comments & Discussion

- Scheduling has been a little more difficult this semester due to busy schedules.