**6/2/24: Requirements, Specifications, and Architecture**

**Roles:**

Alina: idk/team leader

Erik: Frontend/Full-stack/Machine learning

Morgann: backend/data: python django, java spring boot; ML/LLM/math

David: Preferred Front-End/Machine Learning

Robert: Some experience in Frontend like react/react native, Some backend experience like mongoDB/mongoose express.js

Malique: Some experience in Frontend/ Fullstack (MERN), prefer backend/ML

Gus: Frontend (lots of experience in react with various frameworks) / some experience with ML implementations

Alec: Backend. Main experience background is in C++ / embedded and systems software, so avoiding ML or front end would be preferred.

**Ideas:**

David:

* Mood generator based on hashtags, trends, comments, songs
* Backup: interactive sonic art

Morgann:

* Physics w/ atoms, colors, forces, magic/etc. gen by data
  + simple: point-masses (loc, velocity), elastic collisions,
* Evolution one? B/c input is two strings, it could be easy to input any data? and use prev and curr data.

Robert:

* Genetic/Biological Artwork

Malique:

* Interactive color/ atom art generated using users spotify data
* Can have a generalized user version that uses all of users music history data or per-playlist images

**Data Sources:**

Erik:

* [Earth Observing System Data and Information System](https://www.earthdata.nasa.gov/eosdis)
* [EarthCam Network](https://earthcam.com/)

Morgann:

* [World Bank Open Data](https://documents.worldbank.org/en/publication/documents-reports/api)
* List: <https://github.com/public-apis/public-apis>
* [Art APIS](https://github.com/public-apis/public-apis?tab=readme-ov-file#art--design)
  + [Colormind](http://colormind.io/api-access/) color schemes
  + [ColourLovers](http://www.colourlovers.com/api)
* [Real Time APIs!](https://rapidapi.com/collection/real-time)

David:

* developer.twitter.com (twitter API)
* https://developers.facebook.com/docs/instagram-api/ (instagram API)
* https://developer.spotify.com/documentation/web-api (Spotify API)

Malique:

* <https://developer.spotify.com/>

**Requirements:**

* The user should be able to choose data
* The user can add/request data
* The result should be (deterministic? + non-deterministic?)-ly generated from the data
* The result should be understandable (maybe with description)
* The result should be entertaining and artistic
* Would be cool if I could see other people’s outputs? Trending section maybe? (social)
* Works on Desktop and Mobile devices
* I’d like to share my outputs

**Specifications:**

* Collect user input (e.g. audio, location) as data
* Modify visual UI parameters (e.g. colours, speed of transformations)
* Let user traverse through different data sources
* Input:
  + Configurations
    - Choose among our datasets
    - Speed / refresh rate
    - Physics: collisions, gravity,
  + Static
    - Query/Topic → "English String"
    - Click → 1/0 = toggle boolean buttons
    - Location →
      * Coordinates,
      * String description
  + Real-time
    - Video .mp4
    - Audio .mp3

**Architecture:**

* Plug-in Architectures

**Cool Ideas**

<https://www.moma.org/calendar/exhibitions/5535> (unsupervised ai learning from moma archive)

<https://entangledothers.studio/self-contained-003/> (beautiful generative art on biological data)

<https://www.instagram.com/p/C2nnfuqsPwQ/> (beautiful audiovisual generative art)

<https://www.instagram.com/p/C12D4WILKnF/> (text-based generative art)

<https://www.instagram.com/pppanik/> (visual artist with cool generative art and tutorials)

<https://whitecollarcrime.zone/> (straightforward data visualisation with geolocation)

<https://www.uva.co.uk/features/blueprint> (colour-based kinetic art on biological data)

<https://woven-sound.surge.sh/> (interactive sonic art)

<https://danieltemkin.com/DitherStudies/> (simple interactive piece with user-input parameters)

<https://www.artnews.com/art-in-america/features/improbable-games-gabriel-orozco-62829/> (not generative, but cool idea with overlaid images)

<https://www.readingdesign.org/render-ghosts> (not generative, but cool idea with edited images)

<https://www.instagram.com/p/C1Caau1Nze7/> (not generative, but cool idea with edited images)

<https://www.instagram.com/p/Czg49X2R8df/> (not generative, but cool idea with edited videos)

<https://www.instagram.com/p/C0eVgHJNRz8> (cool idea with ascii-based art)

<https://www.instagram.com/p/Cwk2TijNmvy/> (cool idea with l-systems)

<https://www.instagram.com/p/CtSK-AHJ4Wp/> (cool idea with pixel moshing)