## Overview

The purpose of this document is to track the active set of requirements that are used for the CSCI 2340: Software Engineering Art Generation semester-long project. Throughout the semester, this document will be maintained to accurately reflect the requirements that are used within the system. The requirements are broken into separate sections: Art Generation Output (AG\_ART\_REQ), System (AG\_SYS\_REQ), and User (AG\_USR\_REQ) Requirements.

**# Think about this granularity of every aspect of design that we have? What design choices have you had to make in your own system? What design choices have you had to make when integrating with other teams? Completing a list of these can lead to a huge list of trackable specifications.**

## Art Generation Requirements

### AG\_ART\_REQ\_1

**Description**: Video outputs from art generation should be saved to disk.

### AG\_ART\_REQ\_2

**Description**: Each art generation module should exist in its own file

### AG\_ART\_REQ\_3

**Description**: Art generation modules should stop after art is generated

### AG\_ART\_REQ\_4

**Description**: Art generation output should be of fixed length.

**Associated Specification(s)**: AG\_ART\_SPC\_1

### AG\_ART\_REQ\_5

**Description**: Art generation output should be videos of consistent file type.

**Associated Specification(s):** AG\_ART\_SPC\_2

### AG\_ART\_REQ\_6

**Description**: Art generation output should be of consistent pixel dimension.

**Associated Specification(s):** AG\_ART\_SPC\_3

### AG\_ART\_REQ\_7

**Description**: Comprehensive unit testing should be created for each art generation module.

**Associated Specification(s):** AG\_ART\_SPC\_5, AG\_ART\_SPC\_6, AG\_ART\_SPC\_7, AG\_ART\_SPC\_8, AG\_ART\_SPC\_9

## System Requirements

### AG\_SYS\_REQ\_1

**Description**: The system should not consume excess storage for data created from execution (video files, logging output, etc)

**Associated Specification(s):** AG\_BE\_SPC\_8, AG\_BE\_SPC\_9

### AG\_SYS\_REQ\_2

**Description**: Logging should occur on every run of the system to track defects and debug system problems

### AG\_SYS\_REQ\_3

**Description**: Video generation requests should be handled in order.

**Associated Specification(s):** AG\_BE\_SPC\_3, AG\_BE\_SPC\_21

### AG\_SYS\_REQ\_4

**Description**: The website shall be compatible on all major web browsers including Safari, Firefox, Edge, and Chrome.

### AG\_SYS\_REQ\_5

**Description**: Video file types should be consistent whenever accessed after the video has been generated.

**Associated Specification(s):** AG\_BE\_SPC\_1, AG\_BE\_SPC\_2, AG\_FR\_SPC\_2

### AG\_SYS\_REQ\_6

**Description**: There should be a limit to the number of video requests that can be tracked for art generation.

**Associated Specification(s):** AG\_BE\_SPC\_4

### AG\_SYS\_REQ\_7

**Description**: Each request for art generation should be able to be uniquely tracked.

**Associated Specification(s):** AG\_ART\_SPC\_4, AG\_BE\_SPC\_5, AG\_BE\_SPC\_6, AG\_BE\_SPC\_7

### AG\_SYS\_REQ\_8

**Description**: Comprehensive unit testing should be created for each API call.

**Associated Specification(s):**

### AG\_SYS\_REQ\_9

**Description**: There shall be a well-defined way to transmit art generation module selections across all sections of code.

**Associated Specification(s):** AG\_FR\_SPC\_3, AG\_BE\_SPC\_10

### AG\_SYS\_REQ\_10

**Description**: There shall be a well-defined way to transmit parameter data between software components.

**Associated Specification(s):** AG\_FR\_SPC\_5, AG\_BE\_SPC\_11, AG\_FR\_SPC\_6, AG\_BE\_SPC\_12

### AG\_SYS\_REQ\_11

**Description**: User parameter data shall be mapped to art generation modules.

**Associated Specification(s):** AG\_BE\_SPC\_13, AG\_BE\_SPC\_14

### AG\_SYS\_REQ\_12

**Description**: There must be a way to clearly determine if sent slider data is either from a color or non-color source.

**Associated Specification(s):** AG\_BE\_SPC\_15, AG\_FR\_SPC\_6

### AG\_SYS\_REQ\_13

**Description**: The amount of data sent from the Frontend to the Backend shall be the same for every art generation request.

**Associated Specification(s):** AG\_FR\_SPC\_8, AG\_FR\_SPC\_9, AG\_FR\_SPC\_10, AG\_BE\_SPC\_16, AG\_BE\_SPC\_17

### AG\_SYS\_REQ\_14

**Description**: The art generator module should be properly initialized with required information for art generation.

**Associated Specification(s):** AG\_BE\_SPC\_18, AG\_BE\_SPC\_19, AG\_BE\_SPC\_22, AG\_BE\_SPC\_23

### AG\_SYS\_REQ\_15

**Description**: Art generation should occur in the backend.

**Associated Specification(s):** AG\_BE\_SPC\_20

### AG\_SYS\_REQ\_16

**Description**: External API should be used to provide meaningful art generation to the user.

**Associated Specification(s):**

### AG\_SYS\_REQ\_17

**Description**: External API should be used to supply source images for art generation

**Associated Specification(s):**

### AG\_SYS\_REQ\_18

**Description**: External API should be used to supply data for user parameter selections

**Associated Specification(s):**

### AG\_SYS\_REQ\_19

**Description**: External API should be used as the ranges for user parameter selections.

**Associated Specification(s):**

## User Requirements

### AG\_USR\_REQ\_1

**Description**: Users shall be able to generate art

### AG\_USR\_REQ\_2

**Description**: Users shall be able to download generated art output

### AG\_USR\_REQ\_3

**Description**: Users holding an account can view public creations uploaded by other users

### AG\_USR\_REQ\_4

**Description**: Users can upload personal datasets to be used for art generation.

### AG\_USR \_REQ\_5

**Description**: Users holding an account can save art generation to their profile

### AG\_USR\_REQ\_6

**Description**: Users holding an account can utilize public datasets created by other users

### AG\_USR\_REQ\_7

**Description**: Users holding an account can chose whether their saved art is public or private.

### AG\_USR\_REQ\_8

**Description**: Users holding an account can chose whether their uploaded data sets are public or private

### AG\_USR\_REQ\_9

**Description**: Users can create an account

**Associated Specification(s):** AG\_FR\_SPC\_1

### AG\_USR\_REQ\_10

**Description**: Users shall be able to share their art generation through social media outlets.

### AG\_USR\_REQ\_11

**Description**: Users shall be able to control parameters of art generation

**Associated Specification(s):** AG\_FR\_SPC\_4

### AG\_USR\_REQ\_12

**Description**: Users shall be able to upload their own images or videos as a source for art generation

### AG\_USR\_REQ\_13

**Description**: Users shall be able to select between different modules of art generation.

**Associated Specification(s):** AG\_FR\_SPC\_11