**Final Project Proposal Worksheet**

1. Who? (if in a group - state group members):

Stejara Dinulescu

1. Name of the Project:

Dopamine

1. Introduction:
   * + 1. What does the project do - what is it? Also note whether it should be performed, exhibited / installed, or both.

This project will be a composition created by pixel analysis of an image that I painted, which is loosely tied to my interpretation of the workings of chemicals in the brain. This will be a portion of a larger project, which will be shown at my culminating showcase on May 12-16. The final work will involve multiple sensory experiences of this phenomenon, including visual (the painting itself), touch (I have carved the image into a block of wood using a CNC machine and people will walk on top of it without shoes on, feeling the bumps and grooves to provide a touch experience), and sound (the composition described above).

* + - 1. Why is it important? What am I contributing to society by making this work?

This work is important because it ties together multiple sensory modalities in one culminating experience. I will provide the audience with my creative interpretation of the way that neurochemicals combine in the brain to produce an experience of emotion—while neuroscience research hasn’t been able to provide a concrete understanding of how our experience/phenomenal feeling of emotion works, we do know that this experience happens due to neurochemicals and activation of certain areas of the brain. Emotion is elicited when our brain processes incoming stimuli from our environment through all of our senses. Thus, my goal is to provide the audience with a multimodal sensory experience in order to instigate thought and analysis of how we process and experience emotion.

* + - 1. What are the tangible deliverables/outcomes?

In the scope of this class, there will be a composition created based on analysis through Max 8.

* + - 1. How will I be expanding my knowledge of Max 8 or other sound coding? (The project must *significantly* involve coding to create/drive sound --any language (eg. C++, Java, Supercollider, Chuck) is allowed, although generally most students will use Max 8.

I will be using image analysis through jitter in Max 8, which is something we haven’t examined in the scope of this class. Further, I will use my knowledge of sound such as additive and subtractive synthesis to build up the compositional elements of this work.

1. Context and Related Work—what previous work has been done in this area? How is what I am going to do different or unique? How am I expanding **my** knowledge in sound art, computer music **OR** its creative/artistic applications?

Vi, C. T., Ablart, D., Gatti, E., Velasco, C., Obrist, M. (2017). Not just seeing, but also feeling art: Mid-air haptic experiences integrated in a multisensory art exhibition. *International Journal of Human-Computer Studies, 108, 1-14.*

This exhibit was a multisensory experience at the Tate Sensorium over 6 weeks. The authors also administered surveys to 2500 viewers about their experiences with and emotional reactions about the work, as well as collected 50 interviews. Overall, the haptic experience was very positive, and participants were excited about the multimodalities that the artwork encompassed.

Wu, X. & Li, Z. (N.D.). A study of image-based music composition.

This paper describes several ways in which to extract data from visual imagery to transcribe to music (for example, use of brightness, RGB values/”texture”, contour, etc.). Furthermore, they provide examples of work such as Vincent Lesbros’ *phonogram*.

In my work, I am incorporating my knowledge of neuroscience and emotion into a physical image that I myself painted, which is then being extracted into a musical composition. This chain of work, relating and basing itself off of each process, will yield itself to several modes of sensory experience. Instead of providing haptic sensation in mid-air like the first article describes, my touch experience will be on the floor, with people physically walking on my work to experience the grooves and ridges created. Furthermore, I will draw from the HCI information in the Wu article, where they describe ways in which image data can be analyzed and converted into a musical composition. In this way, I am building off of previous research yet still providing a new perspective with my work.

1. Timeline for Project Outcomes
2. What are the pieces that need to come together for this project to work?

First, I will need to analyze the image in order to obtain values that I can use for sound synthesis. Then, I will need to creatively organize these sound values into a larger composition, utilizing techniques such as additive and subtractive synthesis to fill out the composition. Lastly, I will need to observe how this composition interacts with the painting itself, as well as the touch component of the project (this will be after the scope of the class).

1. Give dates that you will expect to finish each sub-piece

April 25th: convert image into sound values

April 30th: sound values are organized into a composition

May 2nd: composition is filled out with other sound techniques to provide a whole experience of sound.

1. Give the date that would like to demo your *working* project prototypes for feedback.This must be done at least twice.

April 30th: demo of the composition after the sound values are pulled from the image

1. Criteria - What will it mean for me to be successful in this work? What am I setting out to achieve? How am I evaluating my progress? Make yourself a rubric.

I am trying to work on my algorithmic music composition skills, as well as involve jitter and max. Thus, this portion of the work will be successful if the pixel information pulled from the image is an exciting organization of sound that can stand as its own composition, as well as make musical sense with the original painting.

Rubric:

Develop an algorithm to read in pixel information to be developed into sound (50 total)

* Use of at least 3 properties of the image to be converted to musical information (30 points -> 10 points per property)
* Utilizes an algorithm to manipulate data into something exciting (isn’t just a one-to-one brightness-to-pitch relationship, for example) (20 points)

Use of Max MSP to generate a composition from pixel information (40 total)

* Composition can stand alone and is exciting musically (20 points)
* Composition is clearly related to the image being analyzed (20 points)

Professionality/Documentation (10)

* Work is presented cleanly (projection on screen of original image, composition is a .wav file to be played through speakers) (5 points)
* Work is documented through github and on personal website upon completion (5 points)

1. Documentation - How will I document this work to show it in the best light in my portfolio? What are my plans for this? How would I distribute/perform/exhibit this work to the greater public?

This final work will be documented through images and video of people interacting with the system in a gallery space. However, for the sound portion of this work, I will save the piece through max as an .wav file to post on my website. The stages of my work on this piece will also be seen through github.

1. List equipment, etc. that you will need to exhibit or perform the work.

I will need speakers and a device that contains the sound file to be looped in the final work, to be placed at the bottom with the tactile work. For the class presentation, I will just be playing the composition through my laptop, with the image that I analyzed projected onto the wall in the CRCP room.

1. References/Bibliography - use APA format

Lesbros, V. (1996). From images to sounds, a dual representation. *Computer Music Journal, 20(3), 59-69.*

Vi, C. T., Ablart, D., Gatti, E., Velasco, C., Obrist, M. (2017). Not just seeing, but also feeling art: Mid-air haptic experiences integrated in a multisensory art exhibition. *International Journal of Human-Computer Studies, 108, 1-14.*

Wu, X. & Li, Z. (2008). A study of image-based music composition. *IEEE International Conference on Multimedia and Expo. DOI:* [10.1109/ICME.2008.4607692](https://doi.org/10.1109/ICME.2008.4607692)