S

SPECIFIC

Develop an Arduino-based biodata sonification device that captures plant bioelectrical signals and converts them into MIDI notes. Use Python to translate these notes into real-time sound output. Create a basic 3D virtual plant in Blender as the foundation for visual representation. Finally, integrate all components in TouchDesigner to build a synchronized audiovisual installation, where plant-generated sound dynamically influences the visual form. The aim is to allow audiences to experience plant communication beyond the limits of human perception.

M

MEASURABLE

To track my progress, I will publish weekly blog updates that include photos and videos documenting the development of the Arduino device, MIDI sound tests, 3D modelling process, and TouchDesigner integration. Each post will also record the evolution of my ideas, conceptual reflections, inspirations, and the implementation process. These updates will serve as milestones to assess technical consistency, address challenges, and evaluate whether the audiovisual system responds effectively to plant signals by the end of the build phase.

A

ACHIEVABLE

I intend to follow the timeline set out in my Gantt chart, aiming to complete a minimum viable installation by the week 10 & 11. To achieve this, I will build upon the practical skills I developed through UAL courses, where I learned how to set up and implement Arduino systems, convert data using Python, and create 3D models in foundation years. My previous experience with TouchDesigner also provides a solid foundation for constructing the audiovisual installation. In addition to applying this prior knowledge, I will actively seek guidance from academic resources, tutorials, and online communities to overcome technical challenges as they arise.

R

RELEVANT

My installation is inspired by scientific research on how plants communicate through bioelectrical signals in response to environmental changes. This signals that are often imperceptible or overlooked in everyday life. The project aims to explore how plant communication can be made perceptible through technology. Converting bioelectrical signals into sound and visual outputs supports the goal of revealing plant agency through sensory experience. It also engages with broader themes such as non-human communication and ecological awareness. Furthermore, the project draws from key areas of my Creative Computing studies, including physical computing, data sonification, and real-time visual interaction, making it a meaningful and integrated part of both my academic and creative development.

T

TIME BOUND

I will follow the timeline set in my Gantt chart to ensure steady progress.

- By mid-March, I aim to complete the brainstorming and research phase, along with the installation and initial testing of the Arduino device.

- In preparation for building the minimum viable installation by mid-April, I plan to make effective use of the Easter break to develop the virtual plant model using Blender, implement the Python-based MIDI sound output, and integrate all components within TouchDesigner for audiovisual deployment.

- The final visual refinement and debugging aim to be completed by early May, which help to leave time for my thesis writing and final checking before the submission deadline