**AC-10 — AI and Music Processing**

**CS 4850 - Section 03 – Fall 2024**

**Aug 25, 2024**

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| Joseph Zboinski | Michael Egwuatu |
| Selam Kelil | Trey Wilson |

**Team Members:**

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**Collaboration Tools:**

Communication — Teams, Email  
Collaboration — Discord (in between weekly status meetings on Teams)

Version Control — GitHub

**Abstract:**

In recent years, systems like DALL-E 2 and Stable Diffusion have revolutionized the creation of visual art by leveraging artificial intelligence. Despite the progress in music synthesis, AI-generated music has not achieved the same level of acclaim. This project aims to bridge this gap by investigating how AI can learn to perform and compose music. Drawing an analogy to human learning, where a child may either memorize individual songs or learn patterns to enable improvisation, this project explores similar approaches with neural networks. We will train neural networks to recognize and synthesize musical patterns, evaluating how varying network sizes impact memorization and generalization. Key milestones include developing a testbed for training networks, creating an educational tutorial for music synthesis, and evaluating neural networks on specific music genres. Expected outcomes involve a web-based demonstration and tutorial showcasing AI's capability to compose and recognize music, contributing to advancements in AI-driven music generation.

**Platform:**

* Music-generating RNN using Python.
* Online tutorial using Jupyter Notebook.

**Project Deliverables:**

* + Team/Project Selection document (Individual Assignment)
  + Weekly Activity Reports (WARs – Individual Assignment)
  + Team Status Report (TSR – Group Assignment)
  + Peer Reviews (Individual Assignment)
  + Project Plan (Group Assignment)
  + SRS, SDD, STP & Dev Doc (Group Assignment)
  + Present Prototype for Peer Review (Group Assignment)
  + Final Report Package (Group Assignment)
  + Final Report (Group Assignment)
  + Source Code (Group Assignment)
  + Website (Group Assignment)
  + Video Demo (Group Assignment)
  + C-Day Application/Submission

**STATEMENT OF PARTICIPATION**

By signing below, I \_\_\_\_\_\_Trey Wilson\_\_\_\_\_\_ (print name clearly) acknowledge that I will participate in all meetings, communications, deliverables and other tasks necessary to complete the project. If I do not participate, I understand that Professor Perry will meet with me to remedy the situation.

\_\_\_\_Joseph Zboinski\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_8/18/24\_\_\_\_\_\_\_\_

Team Member Date

\_\_\_\_Michael Egwatu\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_8/19/24\_\_\_\_\_\_\_\_

Team Member Date

\_\_\_\_Selam Kelil\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_8/25/24\_\_\_\_\_\_\_\_

Team Member Date

\_\_\_\_Trey Wilson\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_8/25/24\_\_\_\_\_\_\_\_

Team Member Date