

TRACK EXTENSION AND GENERATION USING MARKOV CHAINS

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ABSTRACT

Write this last.

1. INTRODUCTION

Music is typically constructed by humans, for humans. However, machines are becoming more adept at revealing patterns in the way musicians craft their chords. This enables humans to create their own music, and then let the machine take over the task of composer. Our project aims to understand and implement a framework for simple 8-bit music generation through temporal inference techniques. In this paper, we explore previous implementations and existing literature regarding music generation, and present techniques for designing generative Markov models to create derivative musical works.

2. RELATED WORK

Shapiro and Huber created a document using Markov chains for music generation that is easy to understand and makes its source code available on GitHub [1].

3. TIMELINE

Text here, probably a figure too.

4. TASK DELEGATION

In order to figure out the best approach and gather a plethora of sources, we are each looking at various sources related to music data parsing and music generation, from theoretical papers to Python libraries. Colson and Jae are finding classic 8-bit tracks that we will use to train our models on. Oscar has set up a GitHub repository to include written work as well as source code, and made outlines for the final report.

Text

5. RESOURCES

5.1 Tools

Any tools we'll use (e.g. Jupyter Notebooks, MIDI, Python libraries).

5.2 Data Sets

Data sets we'll use (e.g. 8-bit tracks to train/generate from).

6. REFERENCES

- [1] Ilana Shapiro and Mark Huber. Markov chains for computer music generation. *Journal of Humanistic Mathematics*, 11(2):167–195, Jul 2021.



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