MONASH
ENGINEERING

MONASH University

Faculty of Engineering
Summer Research Program 2023-2024

Project Title: Generative AI for Music Composition

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Objective

The main objective of this project is to explore the exciting field of generative artificial intelligence (AI) for music composition and its potential impact on the creative process. By leveraging cutting-edge technologies such as MusicLM by Google and Jukebox by Deepmind, we aim to develop an advanced music generation system that can autonomously compose original pieces across various genres. This project will explore capabilities of AI in the realm of music.

Project Details

The student will first to delve into the technical aspects of MusicLM by Google and Jukebox by Deepmind, and other recent models. Furthermore, we will look into the products of start-ups that is in this space. The project involves identifying datasets that relate to training AI models music composition, training and fine-tuning the neural network models using the collected datasets, optimizing the models' performance and their ability to generate coherent music. The output of the models will be evaluated based on musicality, coherence, and originality. The student will also have the opportunity to experiment with different parameters and techniques to enhance the generated music. The expected outcome is to be able to demonstrate the generated music, and develop insight their creative process and the implications of generative AI in music composition. This is a technical project, hence requires proficiency in Python programming and familiarity with libraries such as TensorFlow or PyTorch for training and deploying network models.

Prerequisites

- Python Programming
- Hands-on experience with deep learning
- Knowledge in music theory is a plus