CS 757

Spring 2025

Assignment 2

Generative Modeling of Music Audio Signals using Birdie

Due April 28th. Before 4:30pm.

You can do this in teams of up to two people.

Your job in this assignment is to design, implement, and use a Birdie model to generate music in a category of your choice (e.g., classical). You should utilize the dataset in <https://www.kaggle.com/code/basu369victor/generate-music-with-variational-autoencoder>

Step 1 Define your **Birdie** model and experiment with different model hyperparameters. (Use the default pre-training technique, there doesn’t seem to be an easy way to skip pre-training in the codebase)

Train the model and then use it to generate some samples.

Step 2 **pre train** the model using **another (just one)** of the pre training techniques explained in the paper, generate samples and compare them with the ones generated in step one.

What to submit:

Set up a directory Assignment 2, and put the following under it:

* A src subdirectory with all your code.
* A report in PDF. Include in it the preprocessing steps, model architecture, training process, evaluation results, and analysis of generated music samples.
* A subdirectory with the audio samples you generated.

Zip your main directory and give it the name CS757Assignment2[names\_of\_people\_in\_your\_team].zip

Upload that zip file in Blackboard. One submission per team is enough.