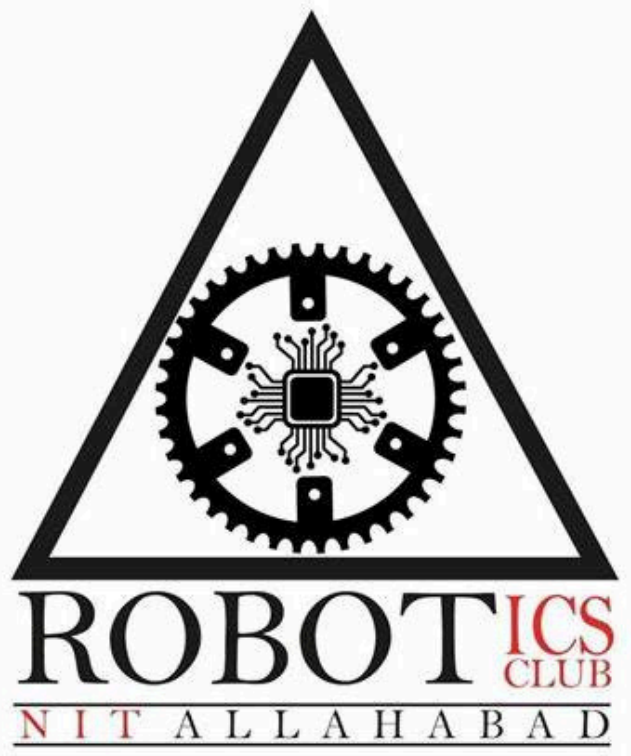


MOTILAL NEHRU NATIONAL INSTITUTE OF TECHNOLOGY ALLAHABAD

AI MUSIC GENERATOR Summer Project 2024

Contributors: Aditya Sahani(20238001), Krishna Mohan(20238014), Pallavi Chahar(20238034)

Mentors: Sarthak Kumar(Final Year), Rishi Mishra (Final Year), Astha Singh(Pre-Final Year) , Ankit Upadhyay (Pre-Final Year)



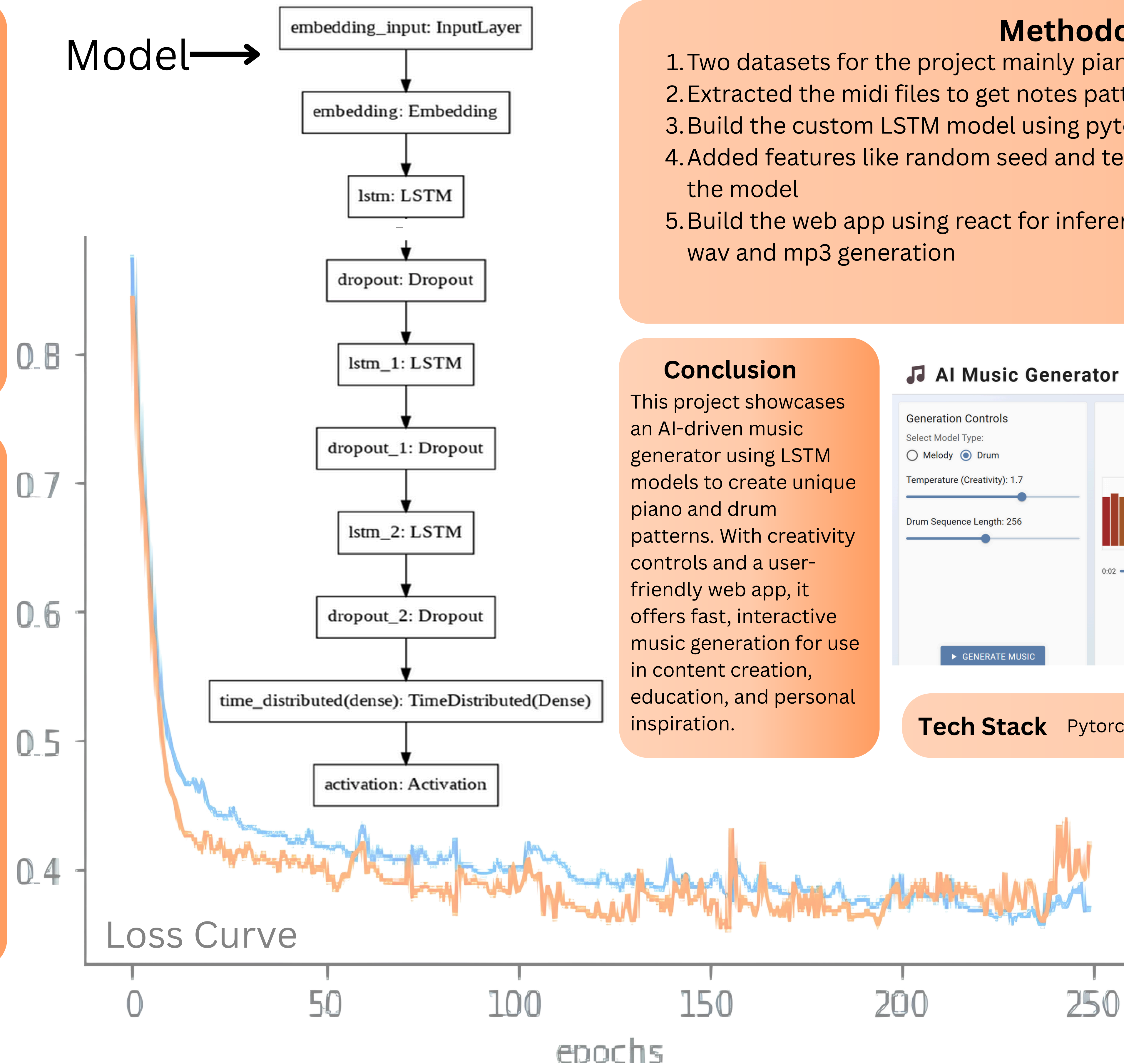
Introduction

The aim of this project is to develop a machine learning model to generate unique music, mainly piano melodies and drum patterns. Using temperature and random seed parameters to control creativity of the model and provide a clean web interface for the user for inferencing

Features

- 1.Supports creative music generation for both piano and drum datasets.
2. Use of temperature to set the creativity level of the model.
3. Use 'Seed' as the starting point of generation, more options available.
4. Supports inbuilt Audio player as well download options in midi , wav and mp3.
5. Interactive UI with fast generation
6. Music Generation history available to the user

Model→



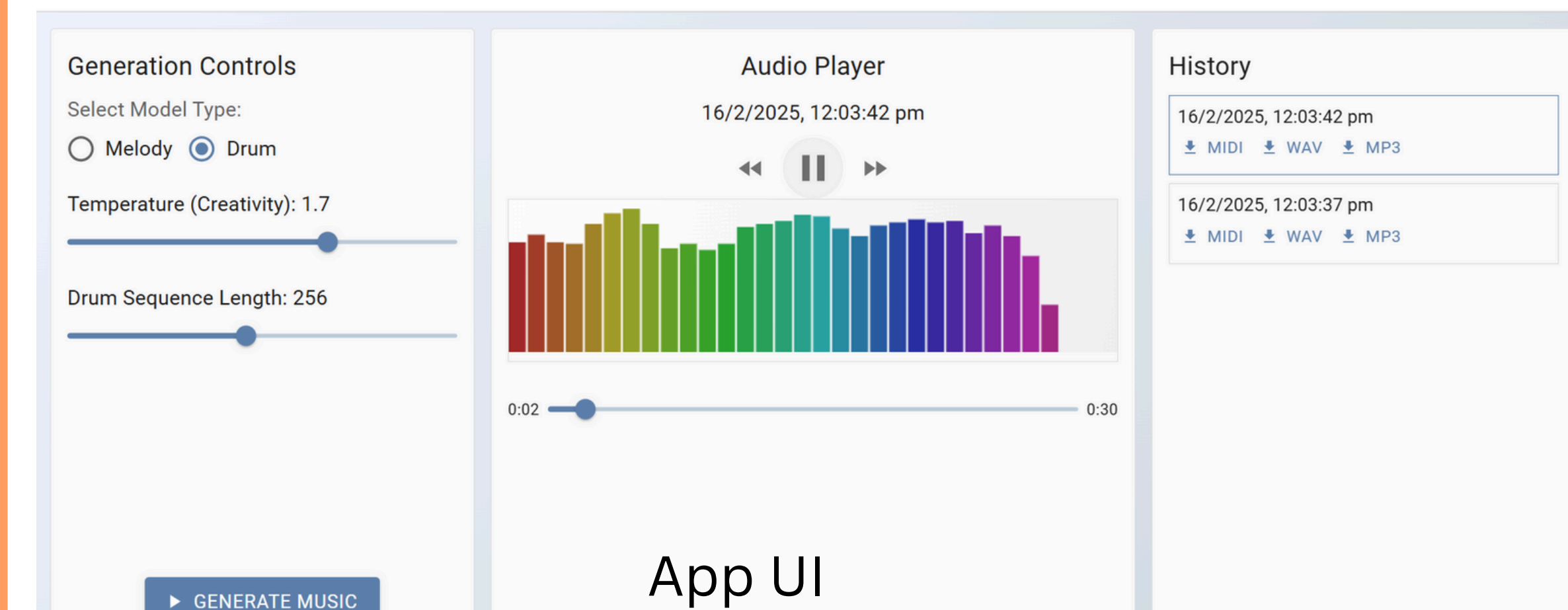
Methodology

1. Two datasets for the project mainly piano and drum
2. Extracted the midi files to get notes pattern and created the time series data
3. Build the custom LSTM model using pytorch to train on this dataset
4. Added features like random seed and temperature to control the creativity if the model
5. Build the web app using react for inferencing the model and it supports midi , wav and mp3 generation

Conclusion

This project showcases an AI-driven music generator using LSTM models to create unique piano and drum patterns. With creativity controls and a user-friendly web app, it offers fast, interactive music generation for use in content creation, education, and personal inspiration.

AI Music Generator



Tech Stack Pytorch, Music21, Reactjs, FastAPI, Javascript,Python

Source Code
and Contribute

