**SoC Summer 2022 Final Documentation**

**Musify -Music development through AI**

**Abhijeet, Amit, Soumya**

**Keywords: RNN,LSTM,Tensorflow,AI,MIDI,Music Generation,Pytorch**

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**Brief Description**

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| In this project we built a model to generate music using LSTM deep learning models. Trained LSTM model with music from kaggle.Used various libraries like Nunpy,pandas,TensorFlow,Pytorch,tqdm for processing the data.All the music parsed to midi and did the analysis. |

**Progress**

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| Week 1 Started python problem solving  Week 2 Started Pytorch and tensor flow  Week 3 Neural network and RNN concepts  Week 4 Article on Music Generation  Week 5 LSTM implementation  Week 6 Implementation part started Some implementation issue came which were overcome by collaboration  Week 7 model training and building  Week 8 Submission documentation and repository |

**Results**

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| ***GitHub:https://github.com/udaybhaskar717/Musify***  ***Video Link:https://github.com/udaybhaskar717/Musify/blob/main/screen-capture.webm***  ***Code link:https://github.com/udaybhaskar717/Musify/blob/main/Musify.ipynb*** |

**Learning Value**

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| Pytorch  Tensor flow  LSTM  Hyper parameter tuning |

**Software used**

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| **Python,keras,tensorflow** |

**Suggestions for others**

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| First try to learn how to analyse the music data and try various model .Generate your own music |

**Contribution by each Team Member**

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**References and Citations**

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| 1. [https://towardsdatascience.com/how-to-generate-music-using-a-lstm-neural-network-in-keras-68786834d4c5](https://towardsdatascience.com/how-to-generate-music-using-a-lstm-neural-network-in-keras-68786834d4c5.)*[.](https://towardsdatascience.com/how-to-generate-music-using-a-lstm-neural-network-in-keras-68786834d4c5.)* 2. [2] https://github.com/musikalkemist/generating-melodies-with-rnn-lstm [3] https://towardsdatascience.com/generating-music-using-deep-learning-cb5843a9d55e [4] https://github.com/abhijit-kr/MUSIFY---Music-Composition-using-AI |

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| Fair use :https://www.analyticsvidhya.com/blog/2020/01/how-to-perform-automatic-music-generation/ |

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| <https://github.com/musikalkemist/generating-melodies-with-rnn-lstm/blob/master/LICENSE>  [Licenses — Matplotlib 3.5.2 documentation](https://matplotlib.org/stable/devel/license.html) |