ECE467 - Lyrics Generation

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1   Introduction

For this specific final assignment, the goal was to produce lyrics from specific artists using their previous songs. This was done using Google's open-source software library for machine learning applications, Tensorflow. The data sets were pulled from artists' previous songs and compiled into a CSV file from kaggle.com; these lyrics were used to train models for each artist and the user has to input the first word for the lyrics to be generated thereafter.

2   Building the neural network

A recurrent neural network (RNN) and its architectures were used for two main reasons: (1) text generation heavily depends on retaining information from the past and (2) RNNs can take arbitrary length sequences as inputs.

For this project, two architectures were used and tested independently, Long Short-Term Memory (LSTM) and Gated Recurrent Unit (GRU). When it came to choosing and testing the hyperparameters, including epochs, temperature, batch size, etc., those are complemented with the results in the *Results* section.

3   Results

Layer	Temperature	Epochs	Generated Texts
GRU	1.0	190	