Distinguishing Bach, Mozart, and Beethoven

Deep learning solutions to the composer classification problem

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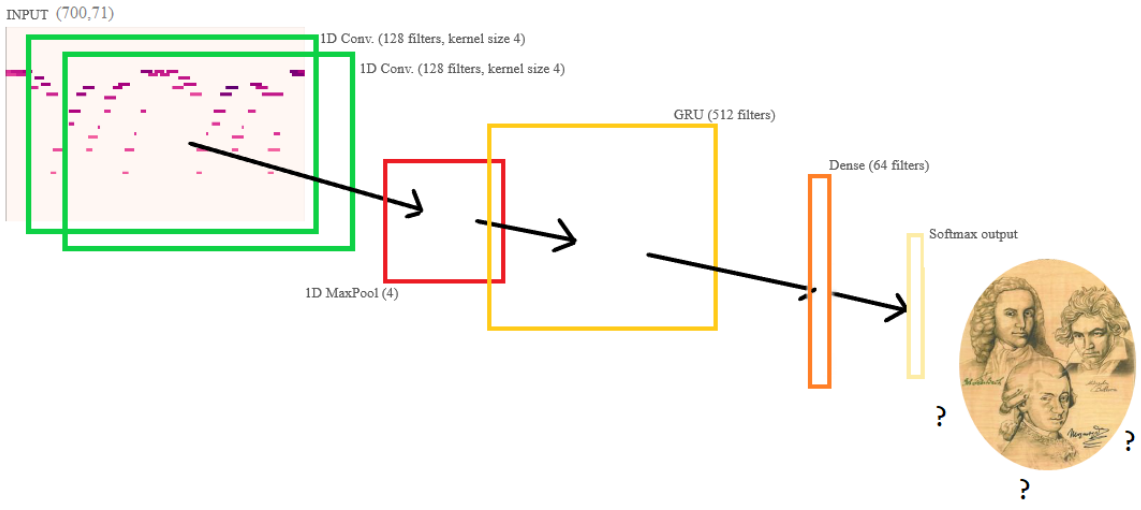
Have you ever heard a piece of music for the first time, but don't know who the composer is? Have you been in such a position where you are almost sure you have heard of similar music before and are trying hard to guess where you heard it? Musicians all around the world have their own distinctive composition styles, singing styles, instrumentation, etc. There are often disputes among music experts about who the true composers of some classical pieces actually are.

In this study, I try to address the "Composer Classification Problem". The aim is to learn a model that can identify the composer of a song that it hasn't encountered in the past. I try to classify three famous western classical composers – Wolfgang Amadeus Mozart, Johann Sebastian Bach and Ludwig Van Beethoven.

In the past, many scientists have used machine learning techniques like logistic regression to address the problem. Deep learning models were relatively unexplored due to lack of large data sets. This makes the problem challenging. The existing deep learning studies have mostly relied on feedforward neural networks. In this project, I try to perform the classification using Convolutional units and a Gated Recurrent Unit (GRU). A decent 72.1% overall accuracy was obtained.



Data sets: https://www.classicalarchives.com/

Project Report: https://drive.google.com/file/d/1vGRWXFZFMfM-8BKV8VaebykyG4oukSl0/view?usp=sharing

Code available on GitHub: https://github.com/siddharthbachoti/WhoComposedIt