

Machine Learning Systems

Melomusic Milestone 3 Analysis

Thus far, our project has been doing well. We have a system that is well on its way to analyzing music and transcribing it. We do not yet have numerical data, but we're nearly there. We expect to see the project achieving a highly accurate result, even if there is a high latency to go along with it.

From what we've collected so far, the exact improvement looks like it is going to be around a 10% improvement in accuracy over the current alternatives. This is important, as it will ensure that all data put through our system is correctly interpreted.

Thus far, a primary negative is the difficulty in interpreting mp3 files within our coding environment. We had a system set up that seemed to be functioning swiftly and accurately, but it has since shown flaws that we are now trying to work out.

From this we are going to work through the process of placing the music on the staff. This is the critical part of the project, as without being on the staff, the true pattern recognition will be far more difficult to achieve.

Given our current progress, we are predicting a more accurate, but less efficient result than the Klangio research papers that founded this research. We will be going beyond what they did in their PHD analysis, as we will be identifying patterns as well, but our final project may end start from a more handicapped position.

To further delve into the topic, I must discuss one major shortcoming of our project: the analysis of the mp3 file. We have been relatively unable to interact with the mp3 files we have been working with and that has drastically set us back. Because of this, we may end up starting with written notes and simply having our system place the notes upon the staff and recognize the patterns within it.

This simplification would reduce the functionality of our project, but it would still allow the system to provide a new functionality that we were not able to find on any online sources.

Our next steps are to finalize our adjustments on our neural network so that the musical scores are accurately produced. We will be cutting it down to the wire, but as we finalize the system itself, our analysis will become easier to perform, as for each set of notes introduced to the system, it will become more efficient at analyzing the given notes and reproducing them as correctly formatted sheet music.