Music Score Visualization

Kobe Chenea, Paul Koos, Victor Marquez, Alexander Prestwich

Background

Currently, there exist few free and open-source tools available to display symbolic music notation and these existing tools are proprietary and expensive. The goal of the project is to create a solution that will enable the visualization of symbolic music in Python, using an existing glyph-based musical font.

Project Goals

This project creates a read-only music visualization interface that handles MIDI or MusicXML input and display an interactive musical score in a view window. This software is designed for the Soundbendor lab, who needed a visualization software for their research involving AI and music.

```
<measure number="1" width="153">
  <note default-x="10">
    <pitch>
      <step>G</step>
      <octave>5</octave>
    </pitch>
    <duration>3</duration>
    <voice>1</voice>
    <type>eighth</type>
    <stem default-y="-32.5">down</stem>
    <beam number="1">begin</beam>
  </note>
  <note default-x="35">
    <pitch>
      <step>E</step>
      <octave>5</octave>
    </pitch>
    <duration>3</duration>
    <voice>1</voice>
    <type>eighth</type>
    <stem default-y="-37">down</stem>
    <beam number="1">end</beam>
  </note>
```

Figure 1: Example of a MusicXML format.

Project Outcomes

This project creates the foundation for read-only music visualization software developed in Python. We designed numerous UI/UX features including window scrolling, window resizing, and score details that is highly responsive to user input. We implemented score slicing to allow the user to load a portion of the score as opposed to the entire score. This project lays significant groundwork for symbolic music visualization software, with many new musical elements and features planned in the future.

musicAI

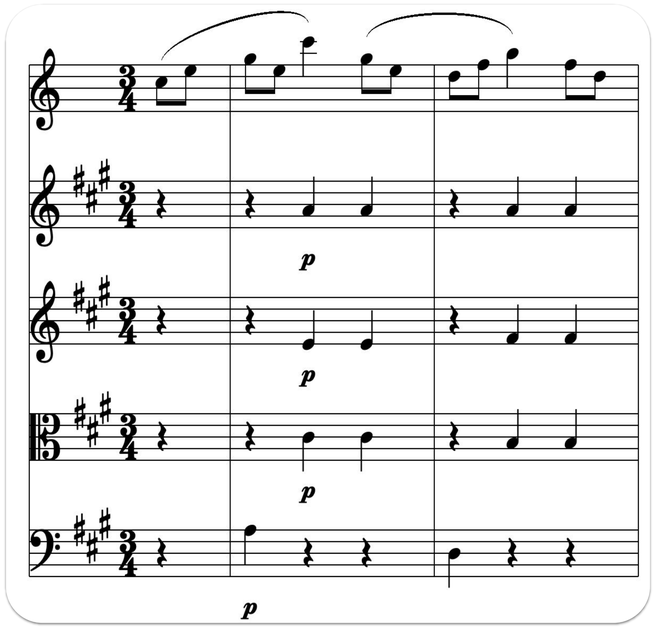

Figure 2: Score visualized from a MusicXML file.

Supported Elements

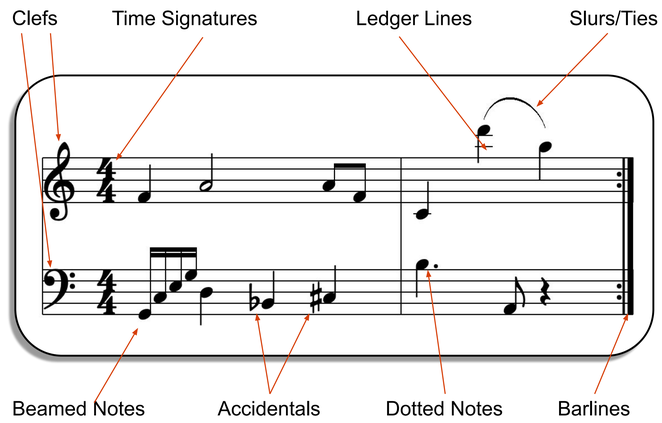

Figure 3: Visual elements currently supported by the score visualization algorithm.

Meet The Project Team



Kobe Chenea

Paul Koos





Victor Marquez

Alexander Prestwich





Patrick Donnelly
Project Partner

soundbendor lab