AI-Assisted Annotation and Analysis of Music Performance Through Audio-to-Score Alignment

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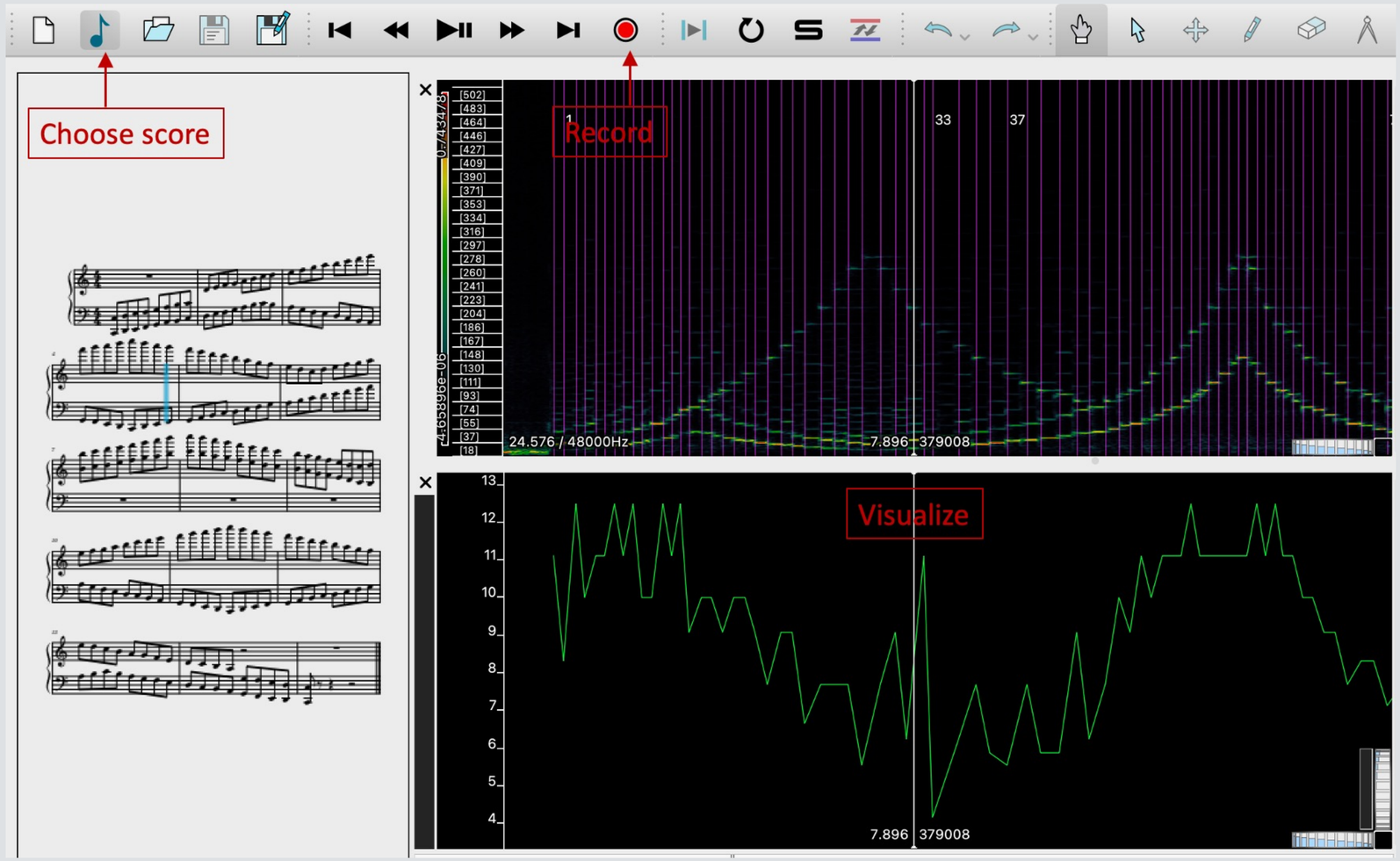
Prototype Screenshot



Descriptions

Performance Annotation and Visualization

What's the Aim?
To annotate and visualize subtleties of a musical performance (e.g., tempo control, loudness, or articulation). This proof-of-concept prototype is adapted from Sonic Visualiser.

What Can It Do?
Given a digital score and a performance recording of this score, this tool first automatically aligns the audio to the score, and then displays key aspects of the performance in the bottom pane (e.g., tempo), while highlighting the corresponding score positions in the left pane as the user navigates different sections of the recording.

Application Examples

Musicology Research
This tool makes it easier to analyze large-scale performance data sets. For example, one could investigate expressive timing of the same piece by different famous pianists, and compare their interpretations in relation to the score.

Music Digital Library
Archivists working with digital libraries may use this tool to generate valuable metadata, ripe for linking to other multimedia content. Such rich data afford tremendous potential for large-scale digital musicology research.

Music Education
Musicians and music teachers will be able to use annotated performances to compare and analyze their own or their students' varying interpretations of the same piece. Musicians at all levels may find the annotations useful to foster reflection and spark insights into past rehearsals or recitals.