

MAES:TRO



School of Informatics & Computing
HUMAN-COMPUTER INTERACTION / DESIGN

Yihe Fu
Jeffrey Gadzala

Ekaterina Ivanova
Lulu Wang



A Practice System to Track, Record, and Observe for Novice Orchestral Conductors

Overview of the Room



Preparation



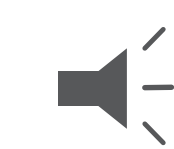
Search for Score



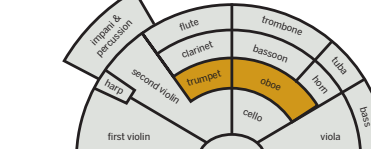
Select a Section



Audio Preview



Arrange Your Orchestra



The touch screen podium prompts conductors to set up the music score and desired orchestra components.

Rehearse



- 1 Virtual responsive orchestra
- 2 Camera tracking
- 3 Orchestra visualization
- 4 Digital music stand

An orchestra is projected onto a semi-circular screen in front of the podium and serves as a visual aid. Cameras record the rehearsal from the front, left and right side. The beat, tempo, and volume of the music follow the conductor's hand/arm gestures.

Review



Review Perspective



Take notes

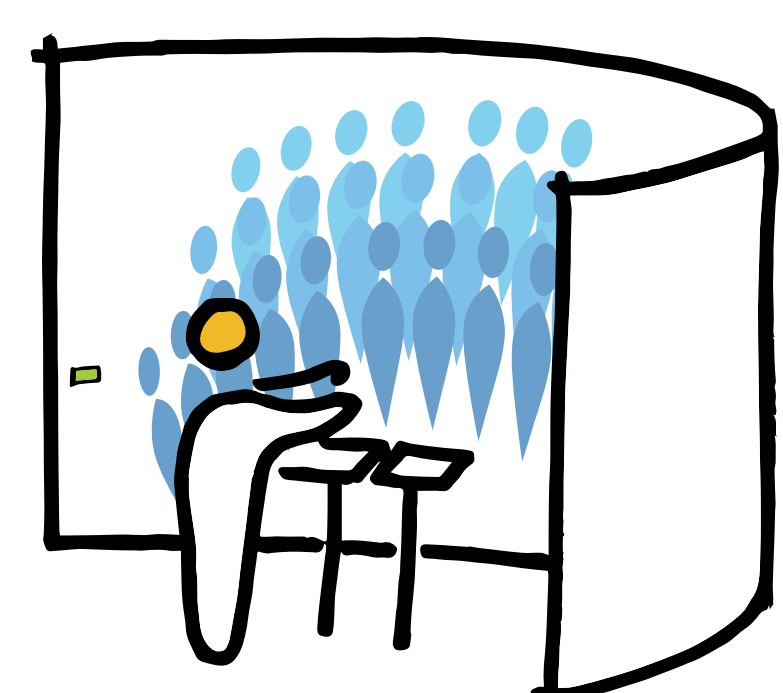


Share Videos



Recordings from rehearsal of the conductor from three angles are projected onto the screen. An animated graphic shows the conductor's body orientation and eye-gaze direction. This review phase is self-directed and open to the conductor's personal interpretation.

Abstract



Conductors use their entire bodies to communicate with an orchestra to guide musicians through a piece of music. Currently, novice conductors learn basic conducting techniques through solo practice, which lacks factors

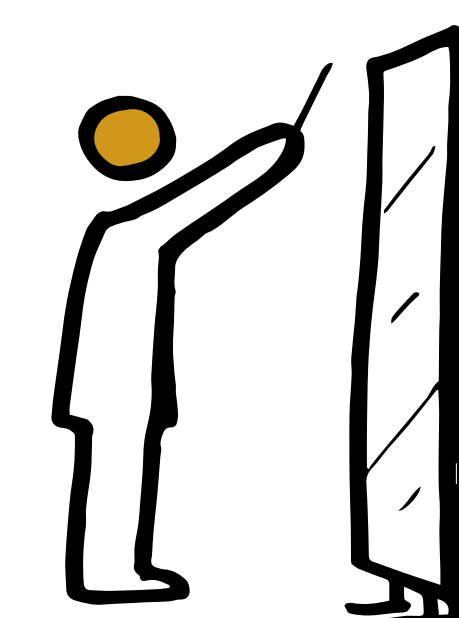
that exist in a live orchestra rehearsal. We propose MAES:TRO: a conducting practice room that provides an immersive rehearsal experience and utilizes hand gestures, body orientation, and eye-gaze directions to directly alter a musical score. With the use of auditory/visual feedback, conductors are able to self-reflect and improve basic techniques. Our Wizard of Oz testing of a mid-fidelity prototype showed the system's potential to improve the effectiveness of novice conductor's solo practice.

Problem Framing

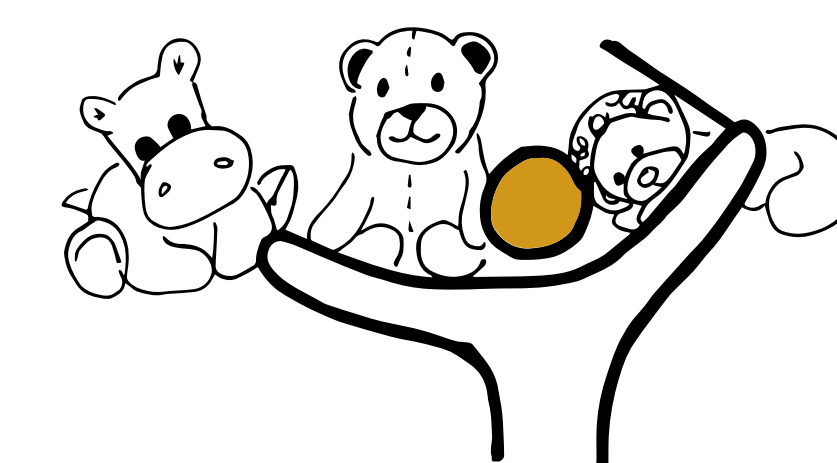
Dilemma



- Organizing a live orchestra on demand is expensive and unrealistic for most novice conductors.



- Solo practice does not optimally recreate a rehearsal experience that is necessary for self-reflection.



Research Insights

- Conductors need visual aids to allocate their attention to different sections of an orchestra.
- Conductors want to see themselves from different angles.
- Conductors want to be in control of the music.

Research Methods

Problem Framing

literature review, observation of conductors in practice, observation of graduate level conducting class, interviews with four student conductors, interview with a conducting professor

Concept Generation

sketching, low-fidelity prototype, iteration

Design Evaluation

testing of low-fidelity prototype with three conductors, Wizard of Oz test of mid-fidelity prototype with one conductor, peer review