Live Virtual Reality Concerts Using HMDs

What does it feel like to be an audience member or a musician at a VR gig?

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MOTIVATION

- Often, it is not possible to see the musicians you want to see due to your location
- Existing VR concerts are streamed videos → removes all social aspects of a concert
- Music equipment and renting a venue can be too expensive for small musicians
- Currently limited opportunity to practice preforming in front of crowds before a real life show
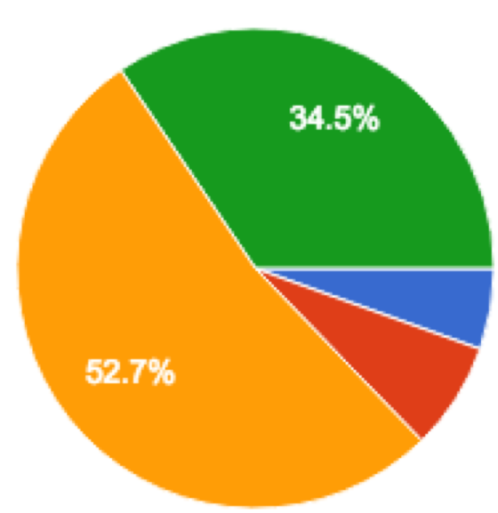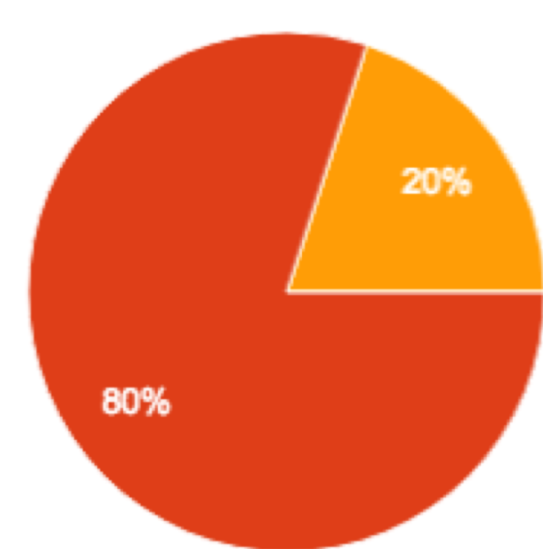

Survey results

AIMS

- Create a platform in which musicians can perform and audience members can attend live VR concerts
- Create virtual instruments that are intuitive to play in VR
- Create social features to allow audience members to communicate (voice chat and hand gestures)
- Create appealing visuals (such as a light shows) to enhance performances
- Have a selection of venues, from small rooms to large stadiums

PROJECT SO FAR...

- Have a working prototype for Oculus Rift (made last year)
- Recreating from scratch to support Oculus Rift + HTC Vive
- Created a networking test scene, in which players can join a room and interact with objects
- Working on creating the instruments, and networking the audio

PROBLEMS AND CHALLENGES

- Networking the audio – ensuring each client hears the same music, without significant lag
- Efficiently handling many simultaneous clients
- Making the instruments intuitive to play
- Making the instruments easy to understand for the audience
- Works well with different devices (Rift / Vive)

HMDs

- HMD – Head mounted display
- Technology used for immersive virtual reality experiences
- Have recently become commercially available products
- Most common HMDs → Oculus Rift, HTC Vive, PSVR
- Has stereoscopic display for 3D visuals
- Orientation + position tracking
- Often bundled with motion controllers

EARLY PROTOTYPE
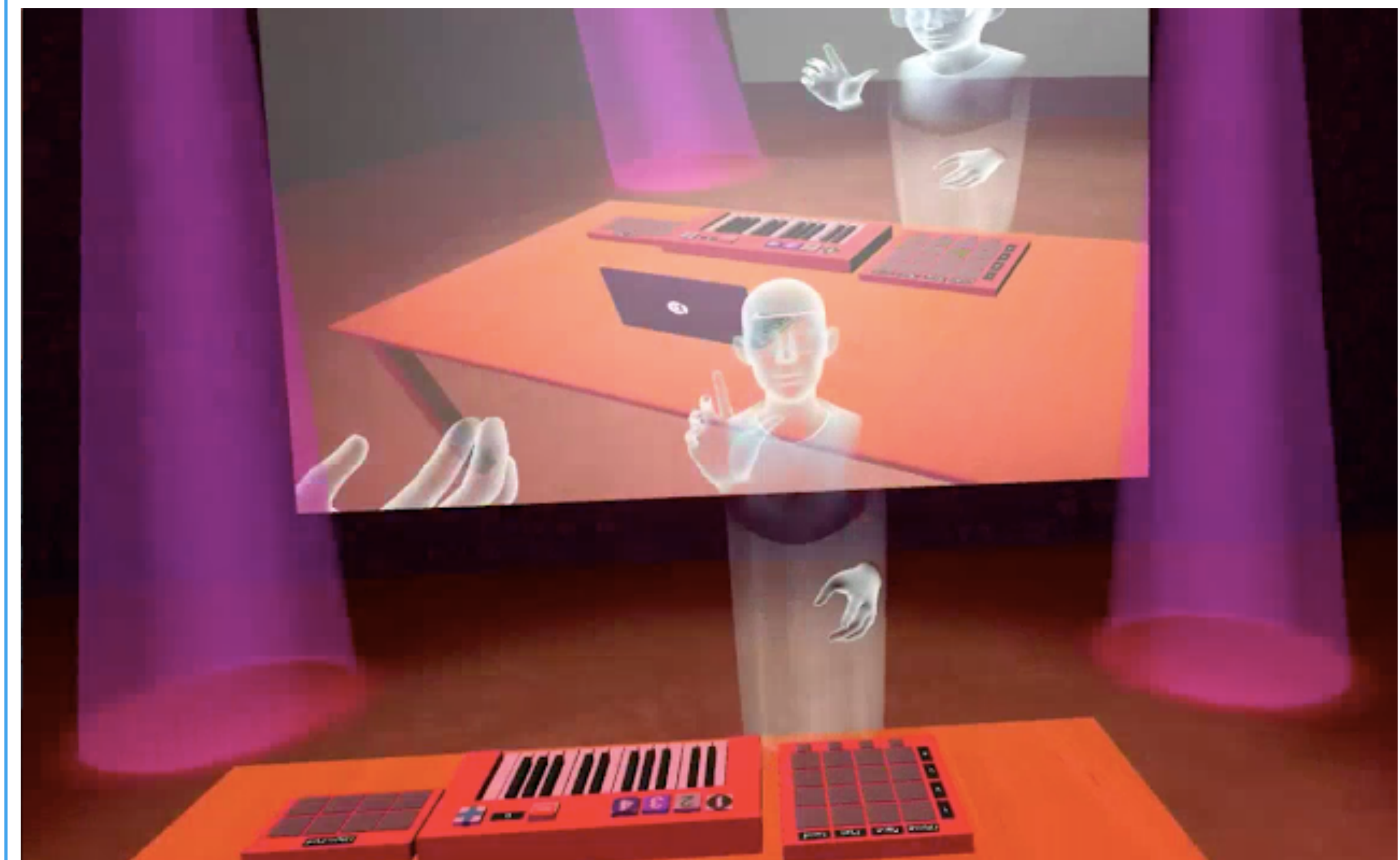
NEXT STEPS

- Continue development on the virtual instruments
- Create simple lightshows to accompany the music
- Design and create the venues
- Work on the social features
- Usability testing
- Release on Steam (in the future)

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