

Submission Title: Enhanced Virtual Reality (EVR) for Live Concert Experiences

By Chase Mitchusson and Edgar Berdahl

While the graphics and arts stakeholders play a crucial role in the development of futuristic virtual reality systems, members of the audio community need to be involved too. Only in this way can the audio and music aspects of VR reach their fullest potential. The present project aims to consider precisely this by creating a VR experience for a live concert scenario.

The prototype of the Enhanced Virtual Reality (EVR) system works as follows. A Kinect motion tracker is used to capture the motions of a musician performing live. This data is fed to the Unity game engine via the Avatar Controller script component, which causes a virtual character to move in response to the musician's movements. Further aspects of the game engine environment are enhanced virtually, and a visual from the game engine is extracted to be presented in synchrony with the audio.

The EVR system specifically aims to glorify the role of the music performer, in order to augment her or his persona and live performance at a concert. The authors believe that there are many different ways this could be achieved, and these are being explored in a series of VR experiments.

For example, it seems consideration should be given to enhancing the performer's appearance in some ways such as using virtual costumes, makeup, alterations to the body, etc. Alternatively, the performer's appearance could be completely transformed by mapping her or his motions onto a virtual, custom-designed avatar. This could be used to create an embodied narrative.

The example scene *Bonafide Performer* renders the musician as a skeleton sending back music from the afterlife rendered using bone-like sounds. The experience of watching the EVR performance transcends the mere combinations of the sounds, to the point at which the music and the narrative fuse together into an Enhanced Virtual Reality experience, aimed at immersing an audience member into a whole new nexus of sound, music, image, and experience.