Virtual Reality (VR) is an area of increasing research with an expanding scope of applications including education, entertainment, and therapy. Audio processing in VR settings often neglects or insufficiently models the impact of the human body on incoming sounds. Recordings made using a dummy head (Binaural) are an accurate way to capture this information but do not allow the listener any relative freedom of motion. Head Related Transfer Functions (HRTFs) can be used to simulate these interactions and interchanged depending on perspective. VARBIS consists of a wireless head-tracking unit and a generic HRTF playback unit which supports four discrete simultaneous sound sources. These simulate a binaural recording of the sound in real time which accounts for position and orientation of the listener’s head. Scenes created in this environment are presented to listeners who are asked to rank the playback against a binaural recording and physical recreation of the events. Preliminary mock-ups without the active tracking component strongly indicate that this is a more realistic virtual audio experience when compared to techniques reliant on panning and amplification. VARBIS will be used with position tracking to create a 3D audio installation as proof-of-concept.

Themes:

Check the most applicable theme according to the abstract.

| Innovation and Technology | Health and Wellness | Culture and Society | Sustainability and Conservation |

Comments:

This sounds very interesting but not knowing anything about VR I get lost very quickly in the abstract. Here is what I think I understand. Audio with VR is not good. This is because the way audio is captured doesn’t sufficiently account for the movement of a person’s head. HRTFs are a slick way of correcting for this problem of head mobility by accounting for the position and orientation of someone’s head while using VR equipment. We test the effectiveness of HRTF playback versus the standard systems reliant on panning and amplification (which I assume are current state of the art but seem to be introduced from the stratosphere in the abstract)!