Music215A: Computer Music Composition & Production

Christopher Dobrian, Winter 2018

Final Project: Musical use of surround sound and inter-application communication

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1. Concept

> For the final project, I made a conceptual "drum room" in the 3-dimension space. In this virtual space, I can move two spheres with a mouse, and they interact with their environment and user behavior. They dynamically generate 3-dimensional sound with different velocity, stereo panning, and a reverb effect.

2. Environment
   a. DAWs

   > I used Max 7 as a primary device and Reason 10 as a secondary device. They are connected by ReWire technology and transfer MIDI signals as Propellerhead's Reason 10 MIDI implementation manual of controller chart.

   b. 3D graphics
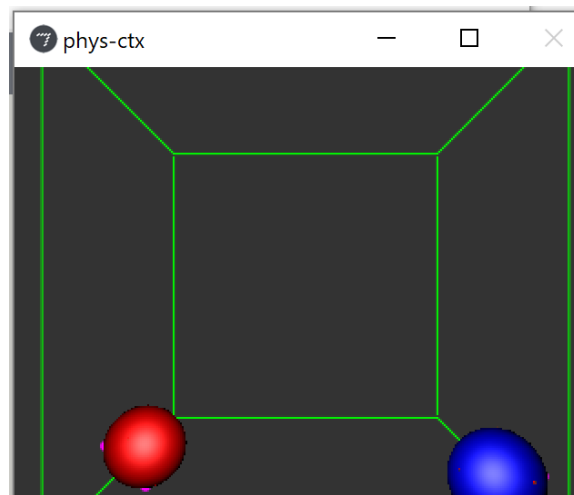
   > I used OpenGL physics engine, provided by Max 7 OpenGL Jitter API. It simulates gravity movement and collision of entities. I designated Casaba percussion as a red sphere, and Synch tom as a blue sphere. I can hold spheres and draw them into the space as the physics engine rules.

3. Music
   a. Instruments

   > I used a bass guitar, a bass drum, a cabasa, and a synth drum. Among them, the bass guitar and the bass drum repeats the main part.

   b. Interactions

   > As a user move the spheres, percussions' sound dynamically change like the below.
   > X-axis: stereo panning (left to right)
   > Y-axis: velocity (light to strong)
   > Z-axis: FX send (reverb intensity)