Computer Science
Senior Design Laboratory
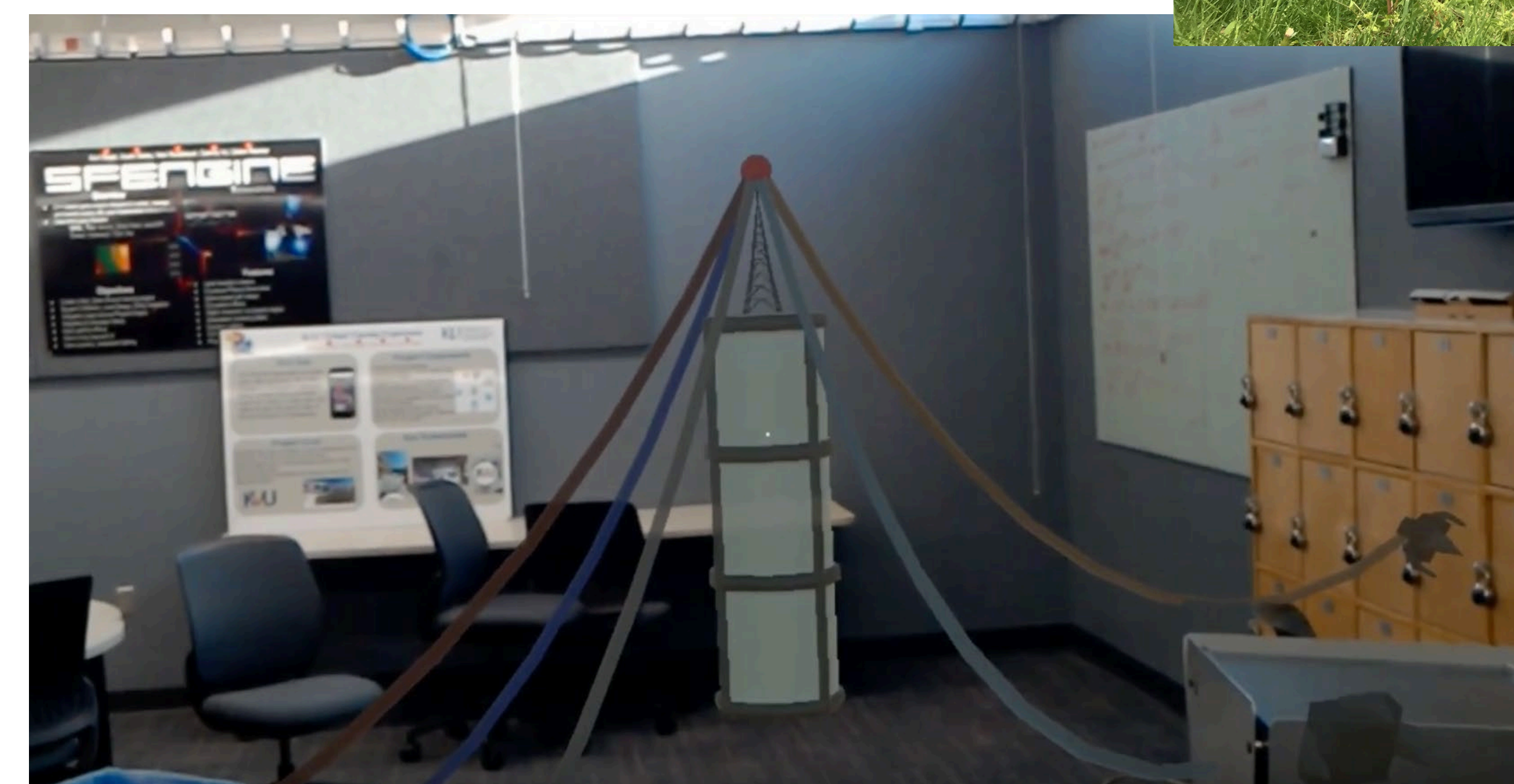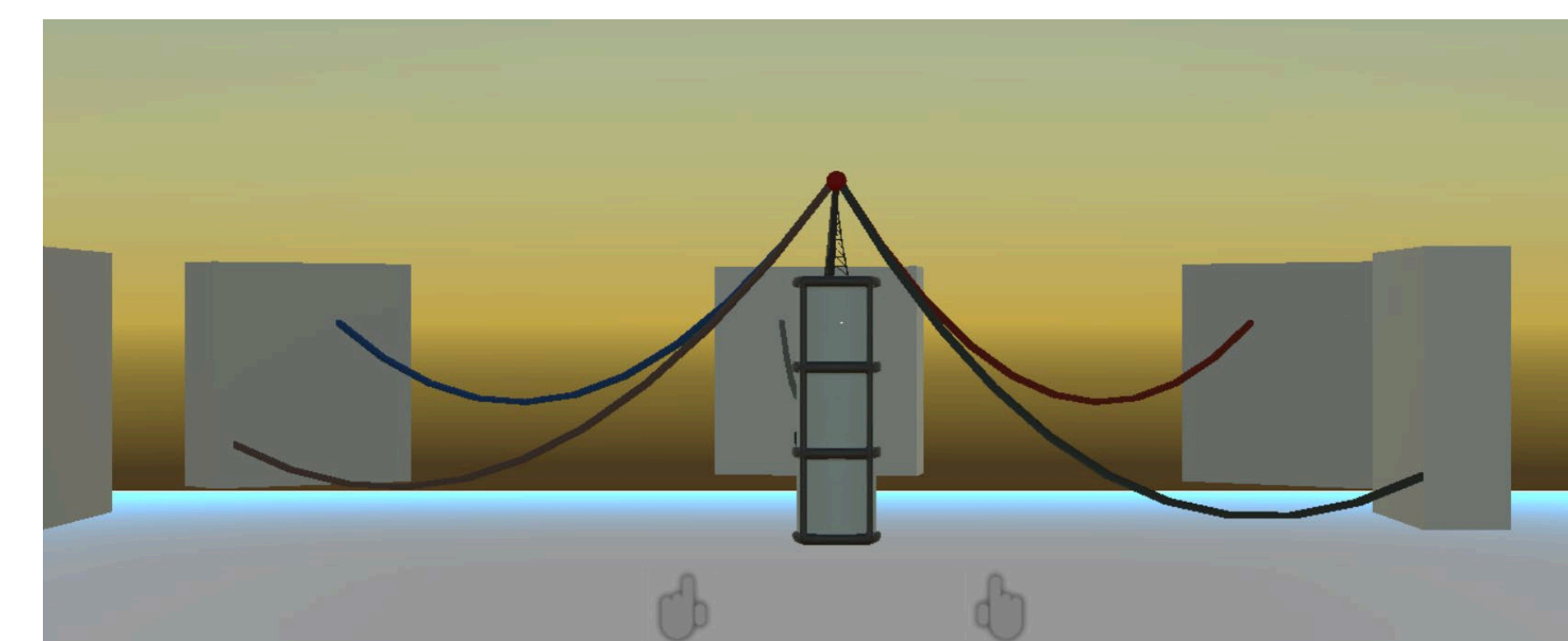
University of Kansas

Sound Around (Team 4)

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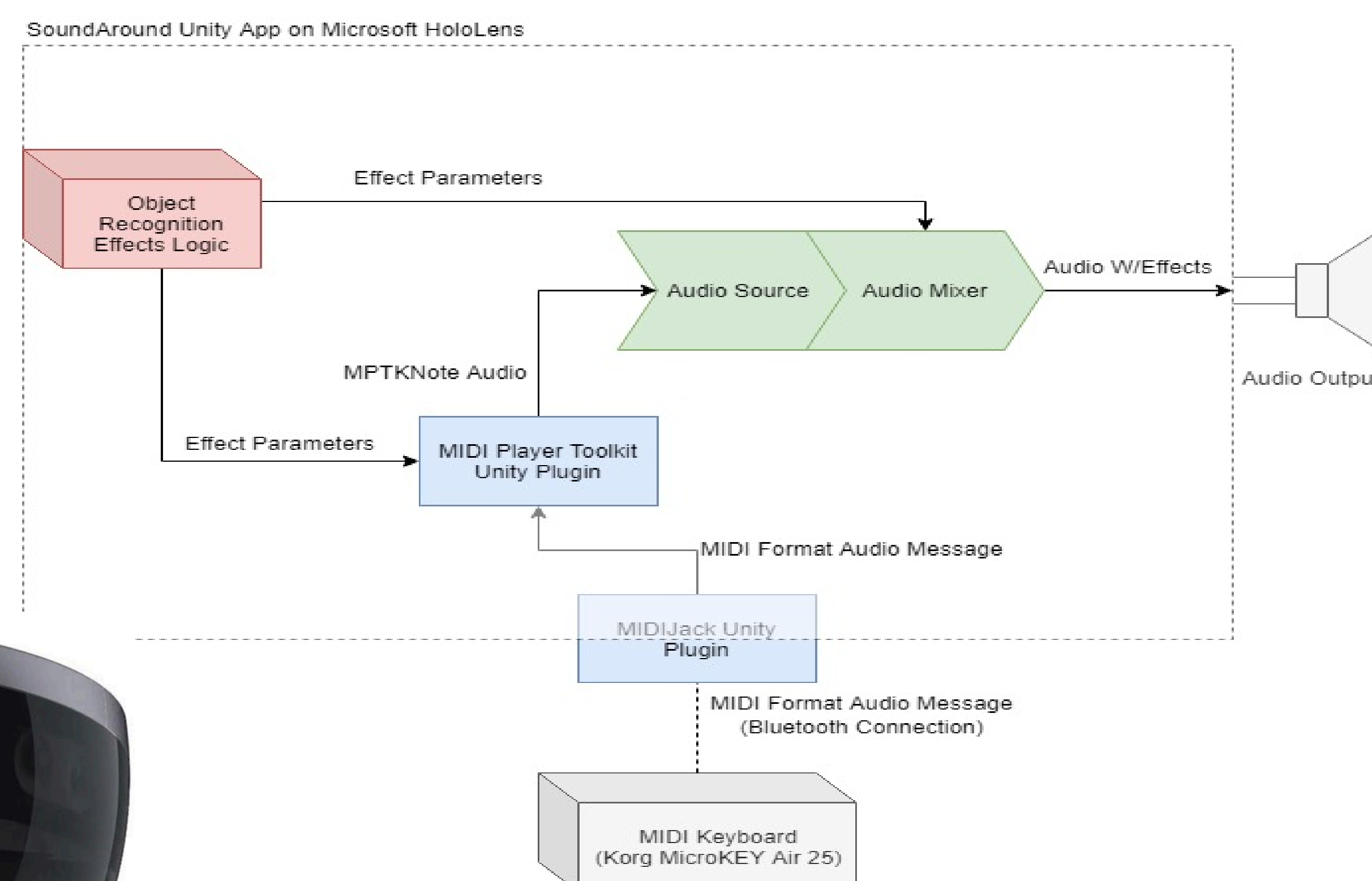
Description & Purpose

Sound Around is an headset-based augmented reality application using the Microsoft Hololens to display 3D holograms in real space. The application allows users to grab colors from their real world environment by placing hologram wires onto objects. These colors are fed into a music synthesizer plugin in order to generate unique sounds based on the properties of these objects.

Design

- HoloToolkit API
- Universal Windows Platform (UWP)

SoundAround Unity App on Microsoft HoloLens

Object Recognition Effects Logic

Effect Parameters

Audio Source → Audio Mixer

Audio W/Effects

Audio Output

MPTKNote Audio

Effect Parameters

MIDI Player Toolkit Unity Plugin

MIDI Format Audio Message

MIDIJack Unity Plugin

MIDI Format Audio Message (Bluetooth Connection)

MIDI Keyboard (Korg MicroKEY Air 25)

Ethical & Intellectual Property Issues

- Ethical:
  - AR can lead to users traveling to spaces that are not safe or legal

- Intellectual:
  - There are IP issues with the recreation of existing music or the stealing of content