6.111 Fall 2019
Hom and Steinmeyer

The project abstract should include the project title, a list of team members, and a one paragraph description of the project itself. We'll use the abstract to assign your project to a member of the course staff who'll then interact with your team for the remainder of the project.

HoloSaber

Jeremy McCulloch, Adam Potter, Sreya Vangara

Abstract

For our project, we will use a VGA projector to display a hologram by projecting onto a translucent cone. We will track the user's movements through both a camera mounted overhead, and by having the user wear a detectable green hat. We will use this tracking to render a 3D model oriented in the direction of the user, and will update the rendering as the user moves around the projection. This should give a realistic illusion of a three dimensional object, although only for up to one user. If time permits, we will emulate a simplified version of the game Beat Saber (a VR game). In our version of Beat Saber, colored blocks will appear and advance towards the user. The user must swipe at these blocks with a laser pointer, earning points by cutting each block within a certain time limit, and will incur penalties for missed blocks. We will use the overhead camera to track the laser pointer and map it to a location on the cone, to identify the trace of the laser pointer on the blocks. Ideally, walls will raise out of the ground and advance towards the user, who must then run around the hologram to avoid the wall.