Jonny Hopkins
Hangboard Controller Design Statement

My love for rock climbing has existed as long, if not longer than, my love for games. My exposure to videogames growing up primarily existed in a social setting with my siblings, either with all of us crowded around a computer watching the other play a single player game, or all of us playing together. Climbing, being an individual sport with yourself and only yourself on the wall, was one of my first experiences with really getting to understand an activity on a deep level. Having stuck with it for 15 years, I have seen the sport develop on a professional and social level, seeing trends in route design, training format, and plastic rock hold design.

Naturally, when I started to make games as a college undergrad, many of my first ideas for games related to principles in rock climbing. My first formal introduction with game design was through the teaching of games as platforms for metagames, taught by Stephanie Boluk and Patrick Lemieux at UC Davis. This lens of approaching games worked remarkably well with my understanding of rock climbing, as the rock wall is a platform for different climbing activities. Many climbing exercises involved games, where several climbers would collaboratively create new boulder problems. With this lens of thinking for games and climbing, parallels between popular platformers and climbing immediately pop out. EXOK's *Celeste* in particular struck a chord with me, as it narratively and mechanically harmonizes with indoor rock climbing. Its focus of having a player study a level before attempting it, multiple ways to do a level, and stamina in particular resonate well between the two. My main design inspiration for creating my hangboard controller was the question: *If Celeste is a re-contextualization of rock climbing, what does it look like to re-re-contextualize (un-contextualize) the game with a physical rock climbing interface?* A major inspiration to this project was Douglas Wilson's *MEGAGIRP*, which similarly features a climbing-related re-contextualized controller.

A major issue with trying to translate *Celeste* into a physical activity was its difficulty. From the project's inception, I was set on trying to play *Celeste* with a climbing training hangboard that was mounted on a wall in my parent's house. An already difficult game, played while hanging from your arms, feet off the ground, is bound to be extremely hard. As this was experimental, my goal was just to play through a screen or two of the original game, one that involved a small number of button inputs.

A second issue I encountered while designing the controller was the literal translation of button inputs. Do I simply map each button from a controller to the hangboard? One of the button inputs for *Celeste* is the "hold onto the wall" button. But I was holding on to the wall with each button! Throughout my playthrough of different levels I experimented with different configurations, including one that always had "hold" activated.

My biggest takeaway from this controller project relates to the theory that level design is to be "read" a certain way by a player. In creating my own system of input, I realized that "reading" a level is less trying to discern what the game wants you to do and more interpreting your understanding of the movement system a certain way.

Hangboard Controller is an alternative controller hardware project, constructed with an Arduino uno, Arduino nano, bluetooth modules, capacitive touch, and an ultrasonic sensor. I developed the project with the help of some existing code repositories over the course of about a week.