Lindsey Kim '24
Internship at Cionic
Summer 2023

    During my internship at Cionic, a neuro-tech startup, I worked on developing a mobile and web application using WebRTC and Cionic's JavaScript SDK that allowed app-users to play therapeutic exercises on a realistic virtual 3D piano in live time using a lightweight glove prototype I built in conjunction with Cionic's founder. We developed the novel lightweight glove prototype with just eight sensors that enabled realistic hand motion tracking and visualization by monitoring hand orientation and EMG signals. In addition, we utilized functional electrical stimulation in order to help users achieve rehabilitation and movement goals. I also created a 3D WebGL gaming application that uses signal data to visualize the motion of Cionic's neural sleeve, allowing users to perform the therapeutic exercises in a competitive environment. During the internship, I used Unity and Blender to model a realistic piano model for the application, and I coded the functionality with C#, allowing me to use the skills I developed from my computer science major. I also used signal processing, data analytics, and calculations with quaternion data to achieve this, which made use of my skills that I developed with my mathematical data science major.