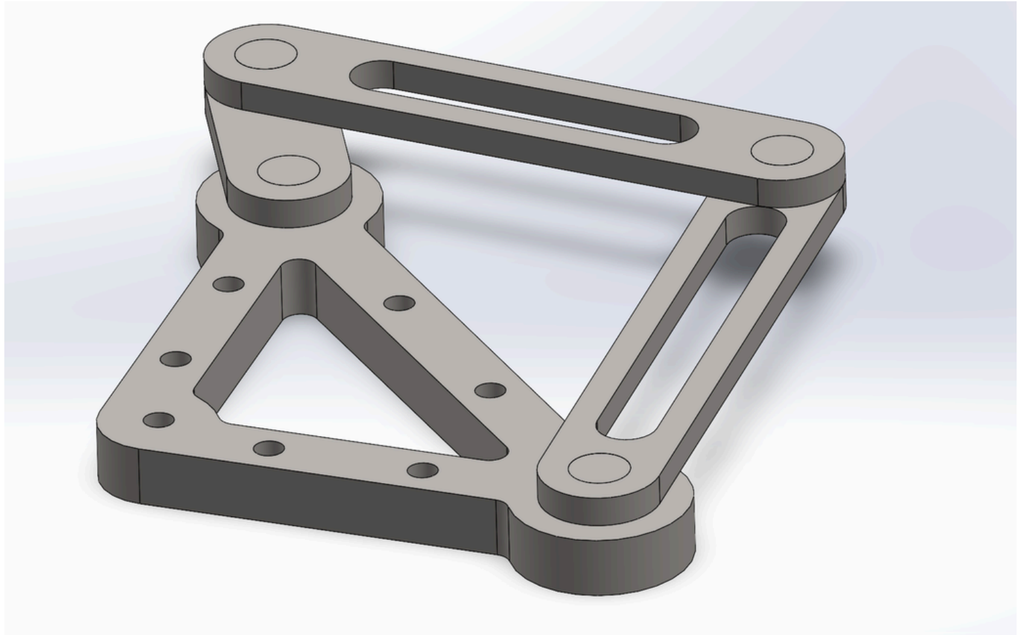
Tucker Romagnoli

- Northeastern University
- Mechanical Engineering
- Second Year
- Seeking a 6-month Spring 2027 product development co-op

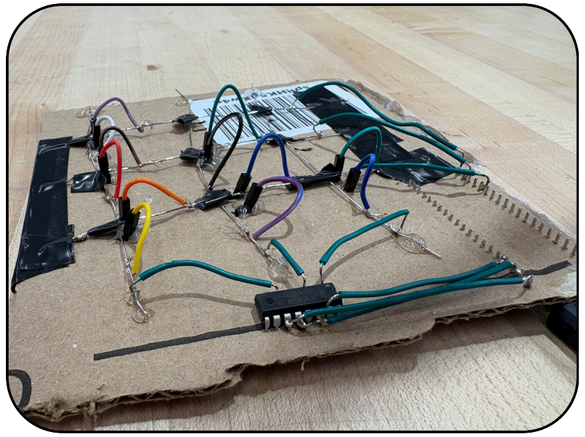
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- FlashFling Soccer, pg 2
- Eagle Scout Project, pg 3
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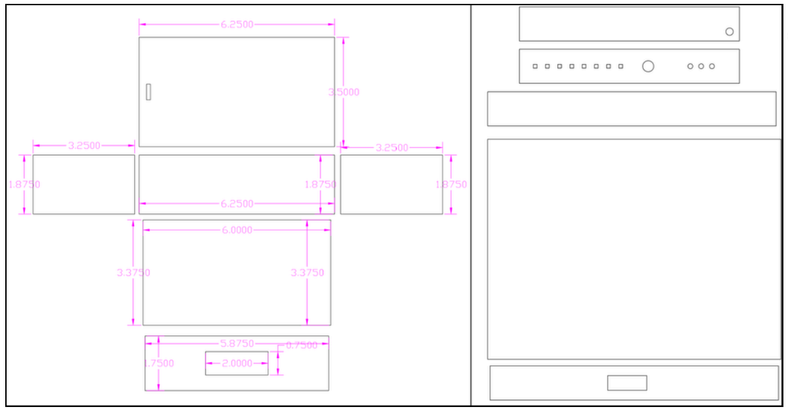


Simple SolidWorks Assembly, Cornerstone of Engineering, Spring ‘26

FlashFling Soccer



First prototype of keyboard matrix to determine player position
This feature was scrapped due to high material/time costs with little improvement to the final result



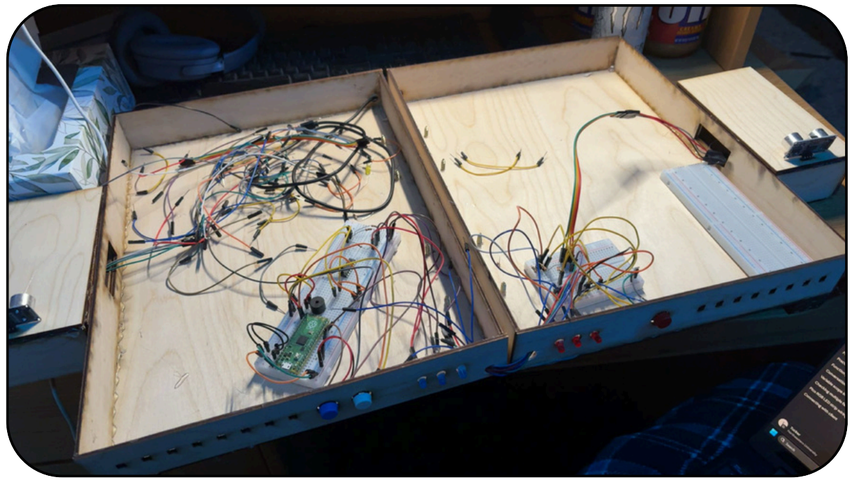
The final AutoCAD drawings made to laser cut goal extension as well as main box structure

Consulted the client and brainstormed a first prototype which used a keyboard matrix to detect player positions

Assembled the circuit using soldering and breadboards to control lights, buttons, speaker, and distance sensors.

Designed a board box to fit the circuitry and display the side-board components in AutoCAD and laser cut it out of plywood

Programmed the full game-flow along with LED strips and distance sensor function resulting in a refined final product ready for presentation



First full integration of circuits into the board structure. Featuring distance sensing goals, time clock light-strips, a scoreboard, speaker, and gameplay buttons using a mix of soldering and breadboards



Final presentation of FlashFling Soccer at Northeastern's Engineering EXPO

Eagle Scout Project



The starting point: a barren parking island and a forgotten, broken Eagle Scout project

Devised and planned a service project consisting of renovating the parking island and presenting a flag retirement mailbox, an Eagle Scout service project



Led and managed a team of 3 for all physical work. Removed layers of hardset to build and set in a frame for the pedestal and mulched the island. Laid stone and concrete before installing the mailbox and plaque



Completed the concrete platform after constructing a frame, then pouring stones before concrete



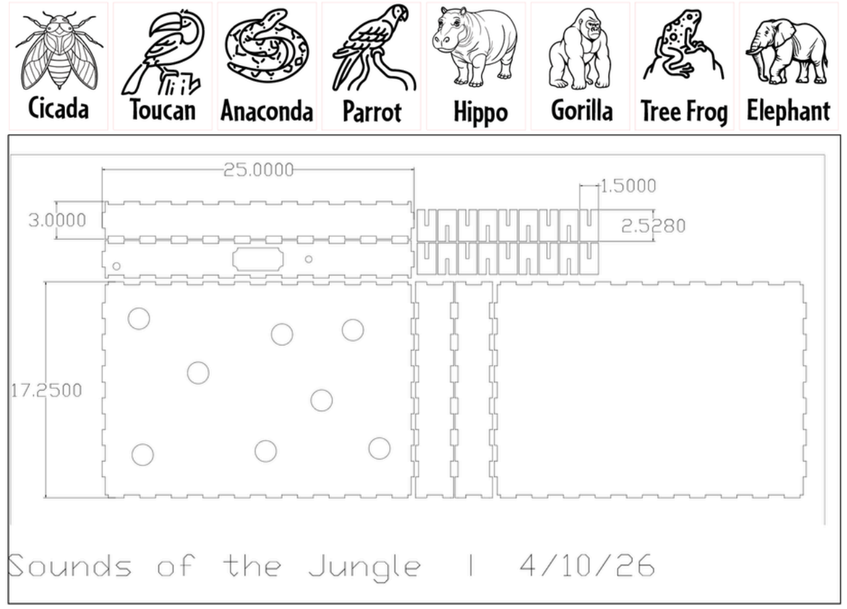
Extensively documented each step including project proposal, plan and budget, and final report to be reviewed by Council, resulting in achieving Eagle Scout and honorably retiring 1200+ American flags



Sounds of the Jungle



Designed the physical structure and layout in AutoCAD of an interactive animal sound guessing game for the Boston Children's Museum. Soldered circuits for an SD card -> Mini player -> Speaker setup and coded the game in Python



Final Adobe Illustration (top) to raster/cut the animal cutouts and AutoCAD (bottom) to laser cut the board and structural supports

Laser cut the board, animal icons, and supports out of plywood. Designed supports to withstand immense smashing strength of children. Painted the box and decorated the table to create an immersive experience for the children.



Recorded real-time data at the museum exhibition on retention, win-rate, and technical failure. Diagnosed failure points in the Mini player due to excessive input volume in real-time, implementing simpler code to keep the game working on museum day

