EECS 373 - Introduction to Embedded System Design

Rock' Sock' and Motion

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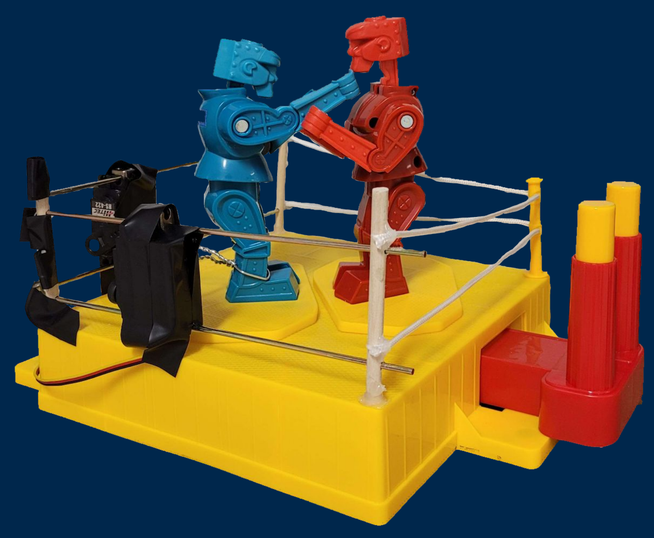
Introduction

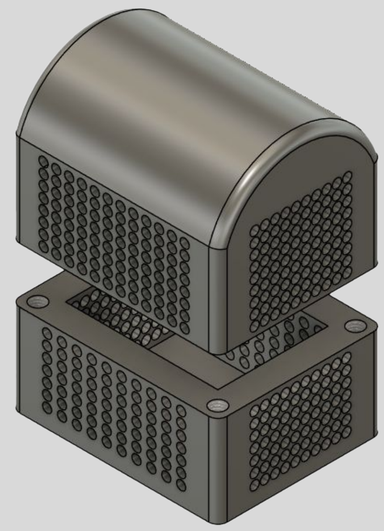
Rock'Em Sock'Em Robots is a classic game but it failed to satisfy our craving for controlling real boxing robots. With our project, we wanted to give the player an authentic robo-boxing experience by linking the movement and punching of the robot to the motions of the player.



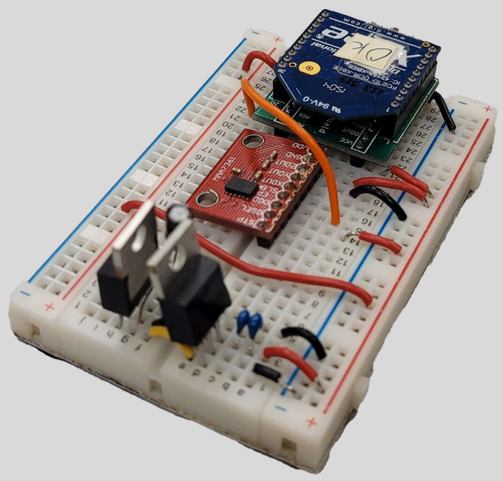
What We Did

In this project, we improved a Rock'Em Sock'Em Robots game to allow one player to be controlled via a Dance Dance Revolution pad and handheld accelerometers. These components allow you to move the robot with your feet and throw punches with your fists.

Hand-Held Controls



Handheld accelerometers communicate wirelessly via XBee to the microcontroller



Breadboard inside each

Component List

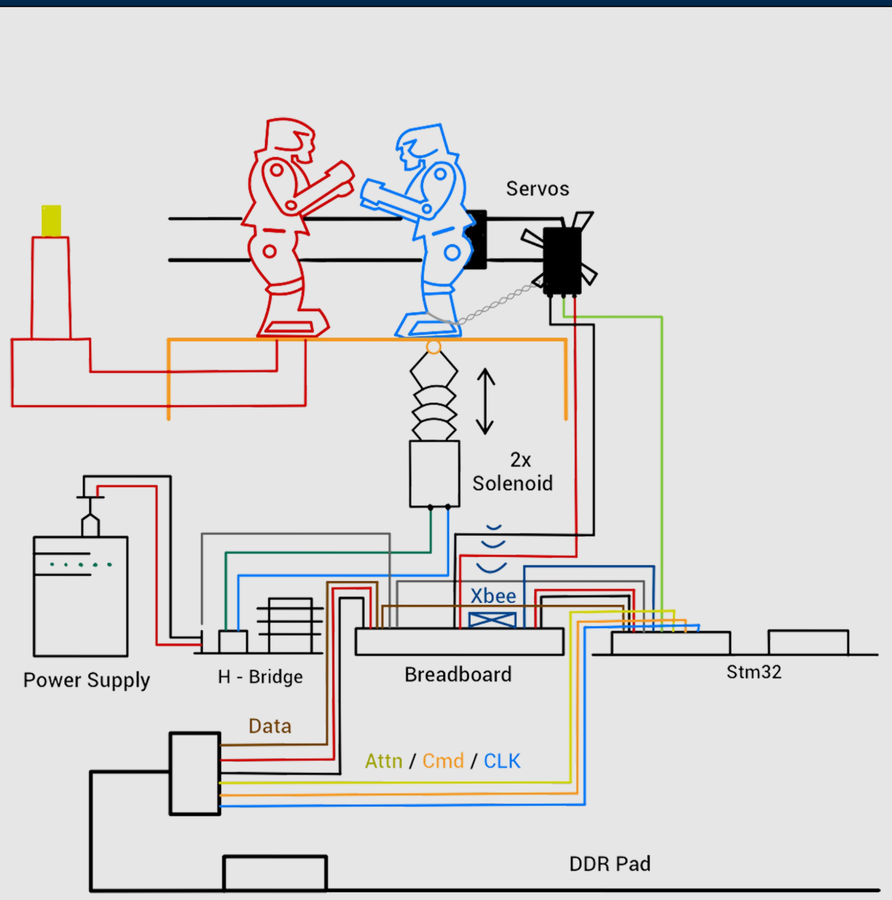
Arena Control

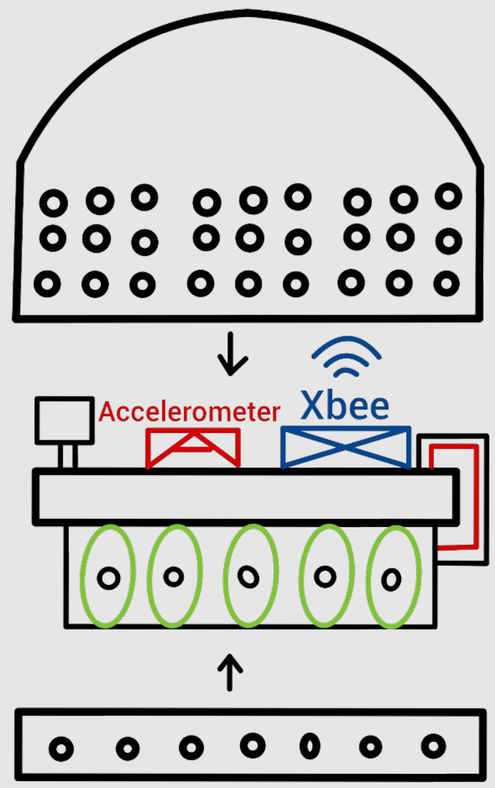
- STM32 Microcontroller
- Controller XBee
- PS2 DDR Mat
- Servos, DC stepper motors, H-bridge

Handheld Punch Sensors (x2)

- Accelerometer
- XBee ADC used to collect values from accelerometer output
- LDOs and capacitors for batteries

Block Diagram





2x
Wireless Handheld
Accelerometer

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