Gabe Garcia

Keeler Tardiff

M4 Lab

Ultrasonic Sensor (HC-SR04) Schematic

A green circuit board with wires and wires

Description automatically generated

Accelerometer (MPU-6050) SchematicA green circuit board with many wires

Description automatically generated

Why we choose this delay and current time

We choose 0.1s to get the most data points out of our tests. We choose our test time to be 20 seconds get as much data as possible and see how the ultrasonic sensor, accelerometer and gyro meter reacted to the jumping walking, harsh turns, soft walking, etc. We did 20 seconds knowing that our strides would last the length of the hallway including the turn within the 20 second time interval.

We averaged our stride to be a .45 meter and had 32 strides total, measuring to be a total distance of 14.4 meters from start to end.

Within our walking we found that the first 30 strides had been straight and the 31st stride was turn then finalizing with straighter step before our 20 second data taking interval ended. The corner was turned at time of 19 seconds and within our plot we see a spike in the gravity scale due to our harsh turn.