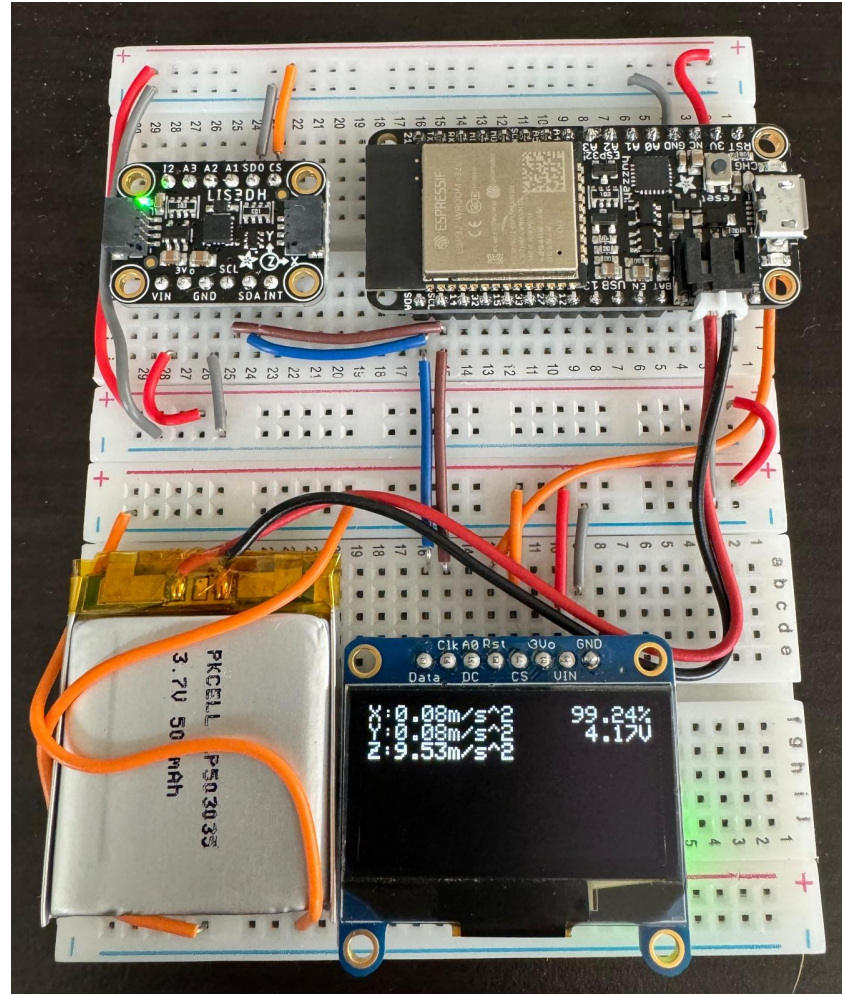


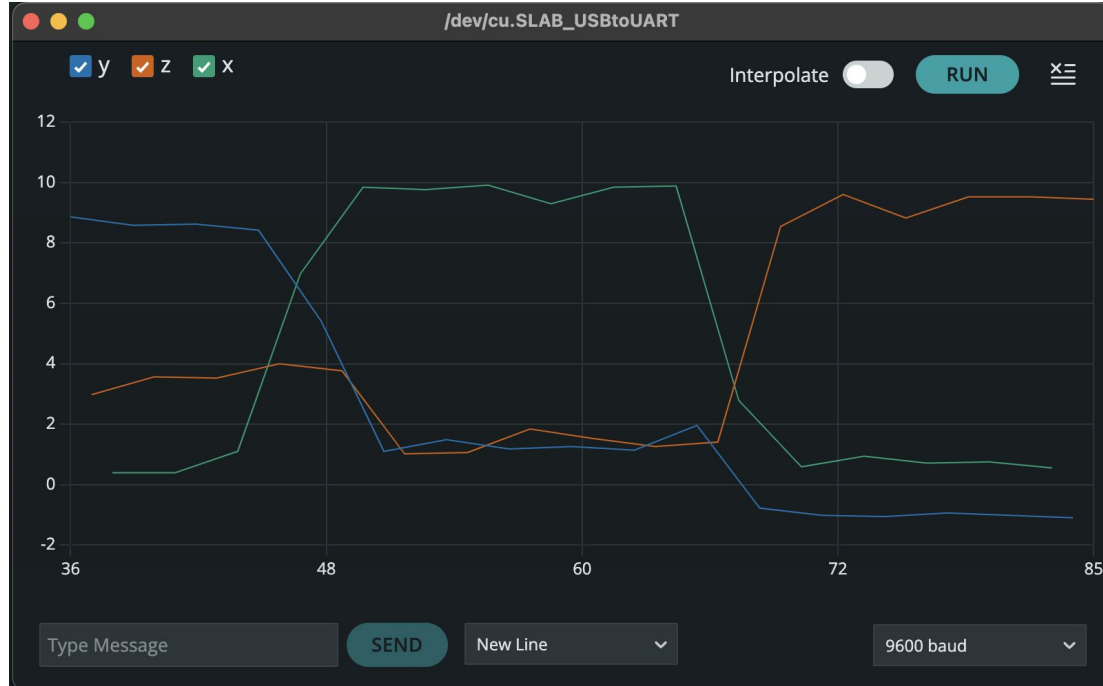
A2 Midpoint

Rahul Surti

Circuit View



Serial Plotter



What is happening here is that I'm rotating the board 90° in the x, y, and z direction. Since gravity is exerting a 9.8m/s^2 force downward, there will always be an acceleration reading of 9.8m/s^2 in one of the geometric directions, whichever is pointing up.

Link to video

[A2 Demo](#)

Initial Ideas

- Since the user can orient the device in any direction while walking, we want to look for sudden net sum of movements in all directions, I would measure this by calculating the vector of motion once the magnitude (sum of absolute value of each direction) of motion increases.
- Once the device stops moving or magnitude of motion decreases significantly, we can mark that as a step.
- We can apply a smoothing filter to the recorded motion/vector and mark each trough as a step.