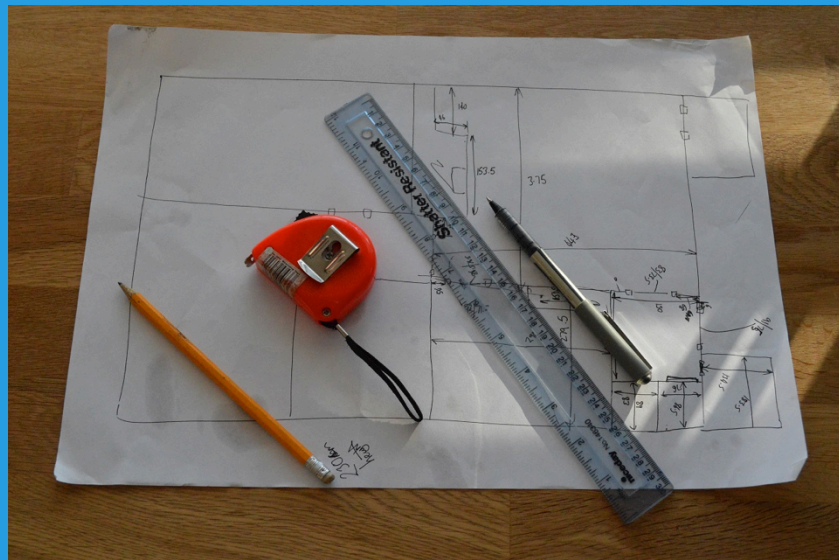


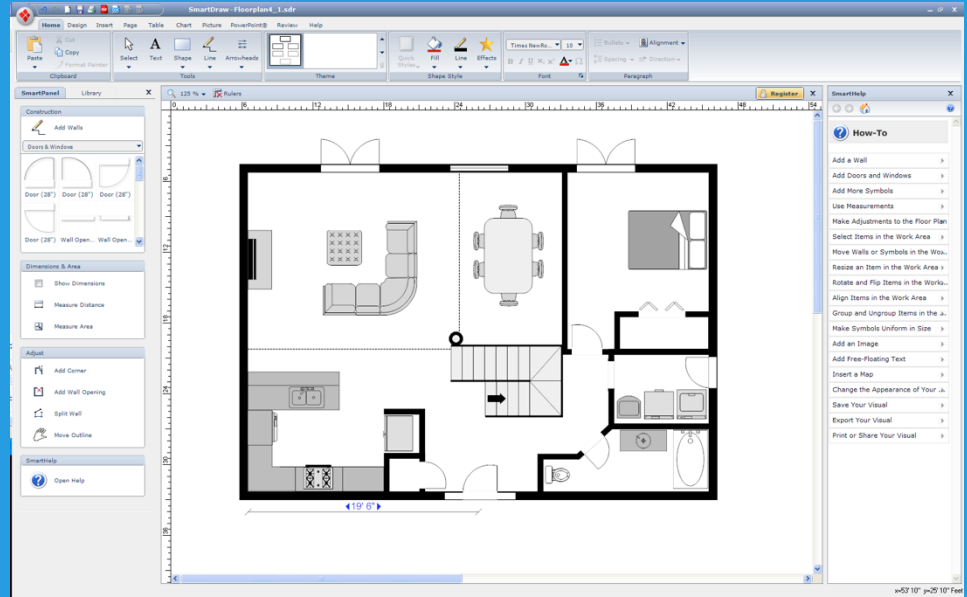
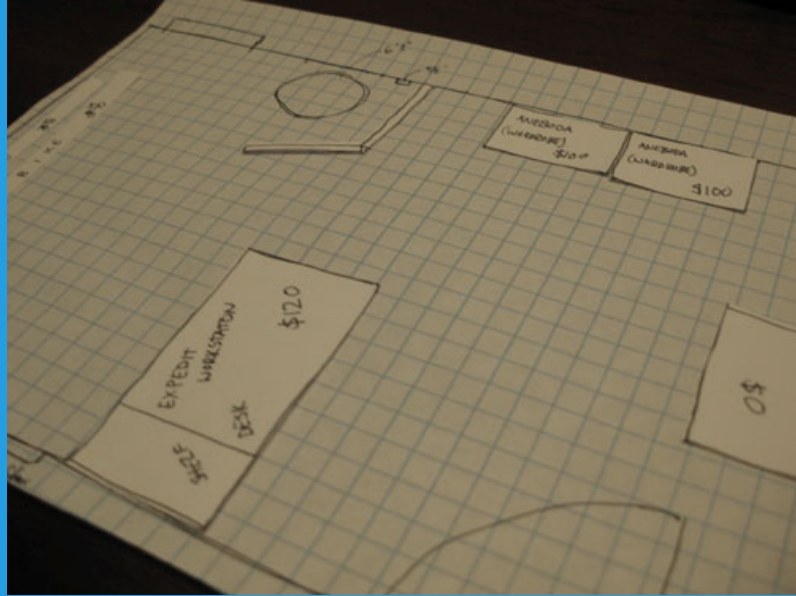
Mapfolio

Kazbek Seilkhan,
Crystal Cheung,
Michael Qiu,
Tom Craig,
Sidney Rhoads



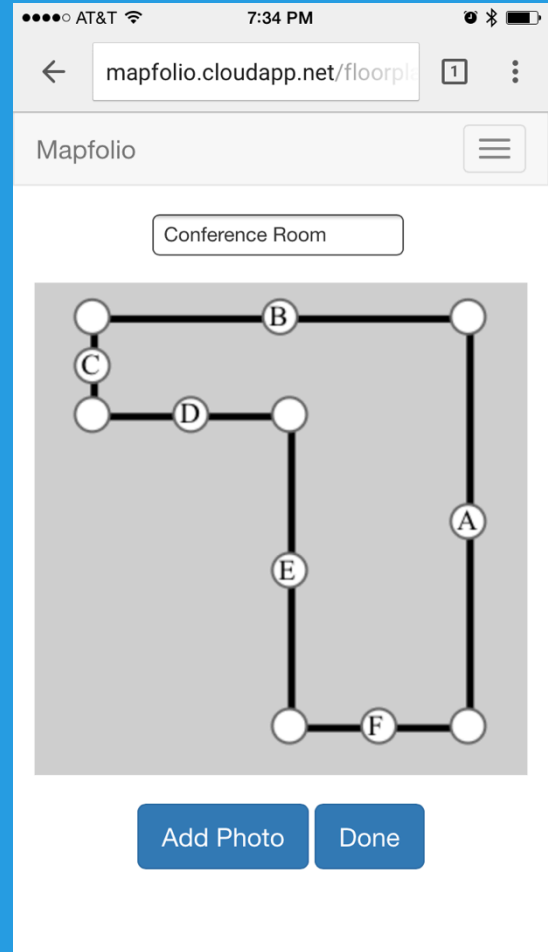
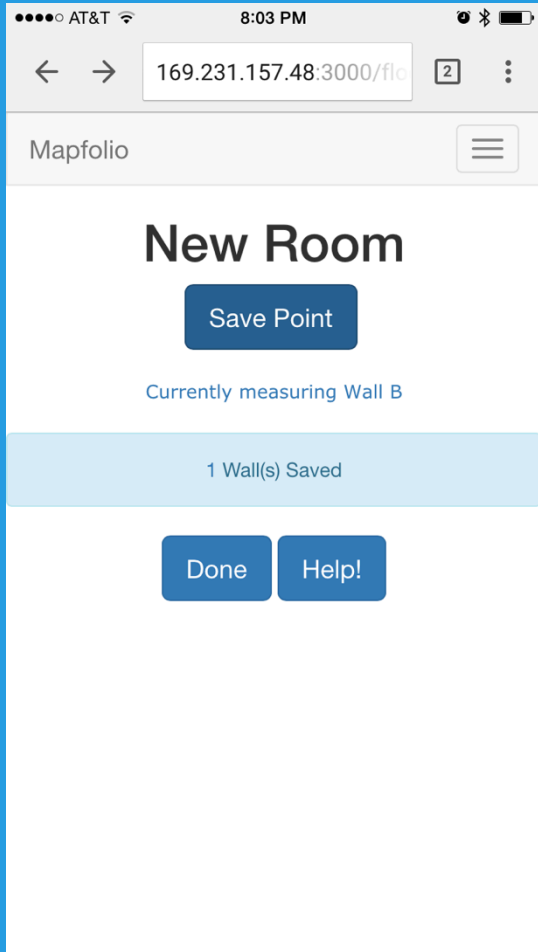


Often drawn by hand, only to be redrawn digitally.

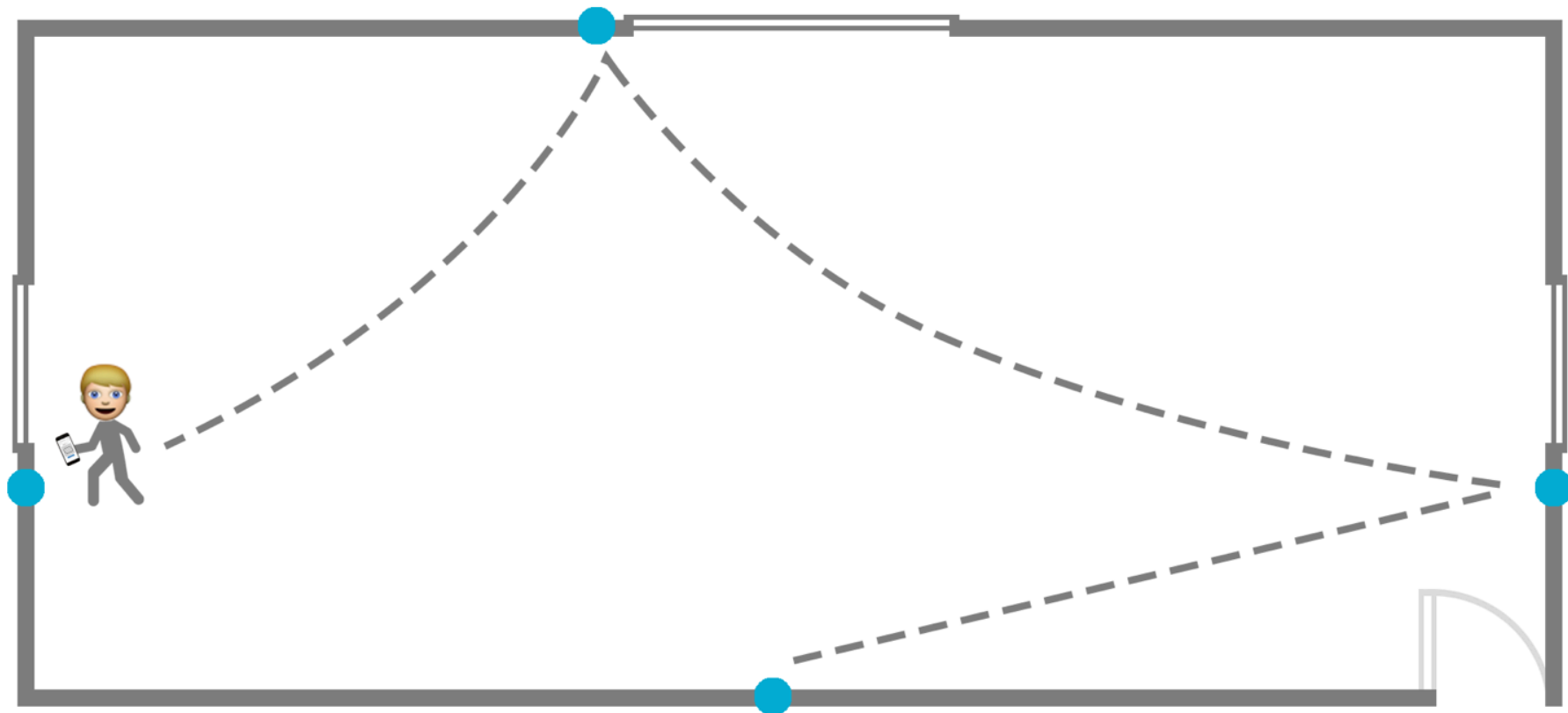


Software can be potentially expensive or hard to learn.



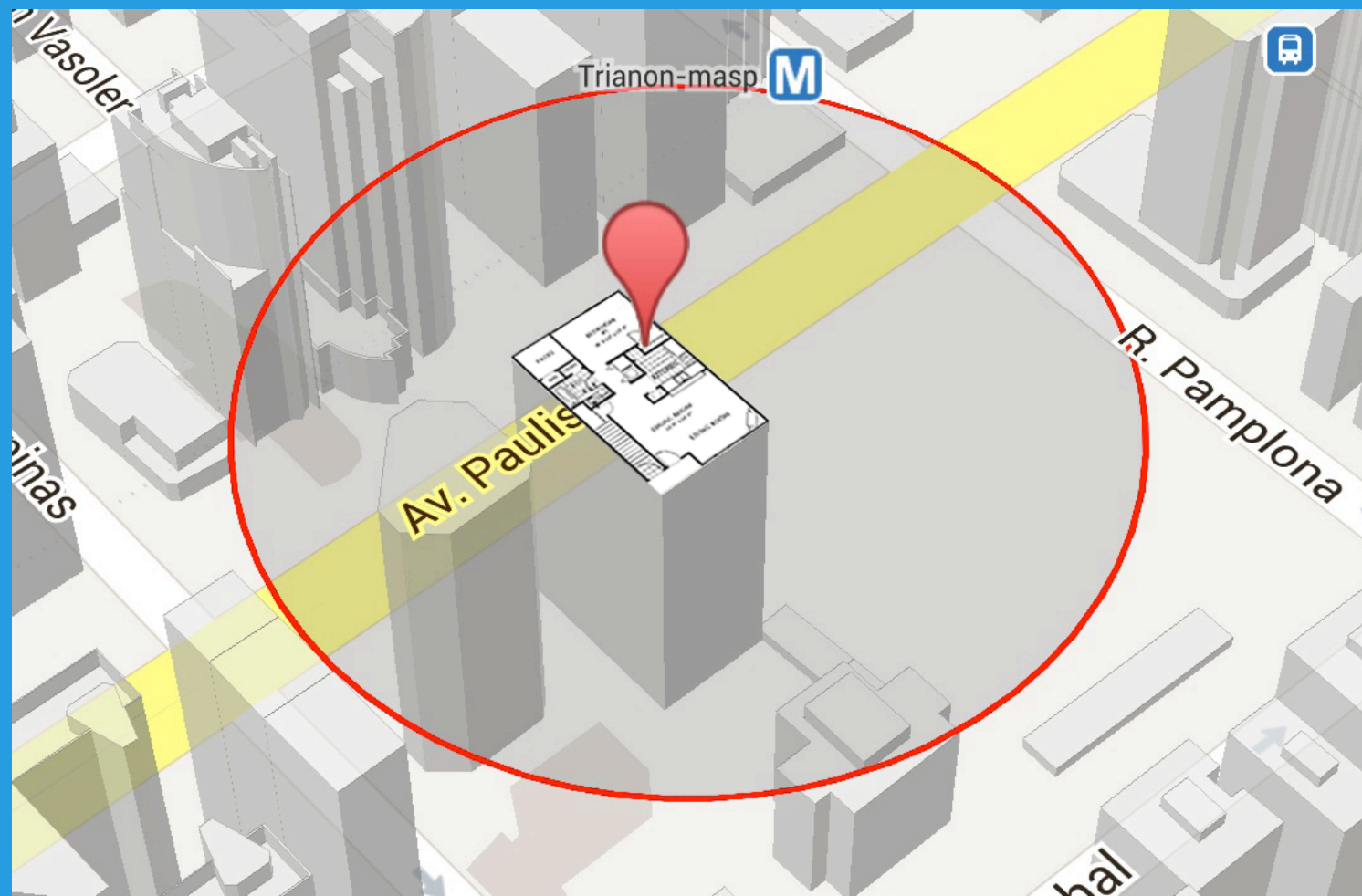


Demo

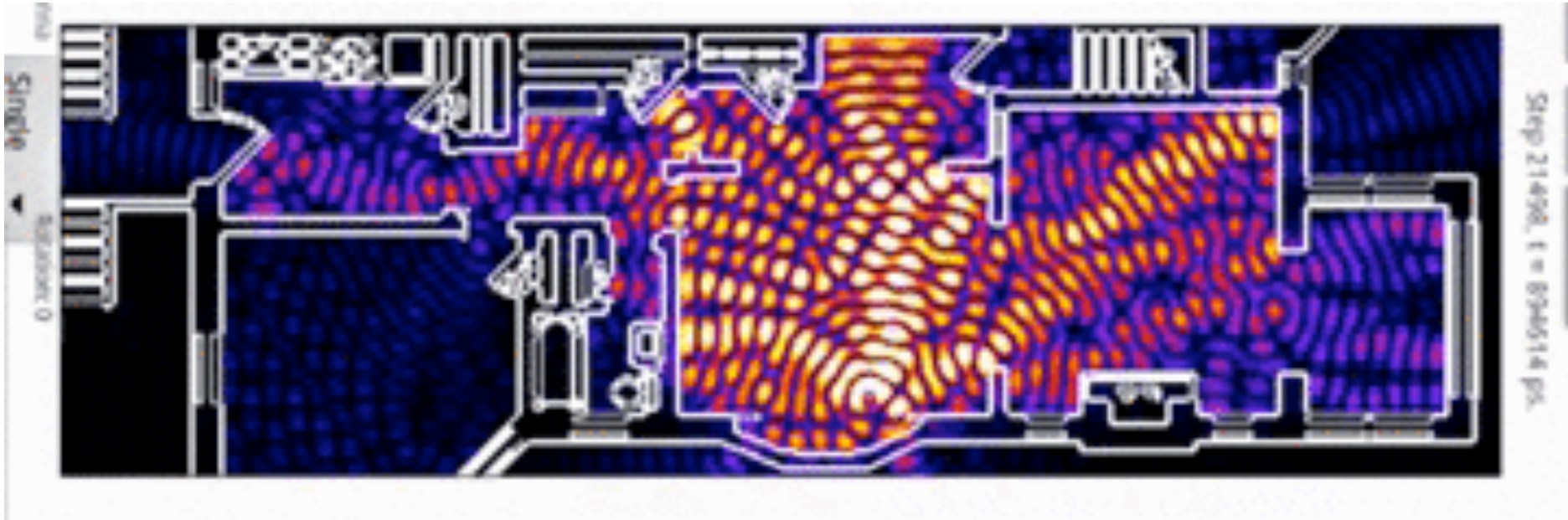


What about GPS?

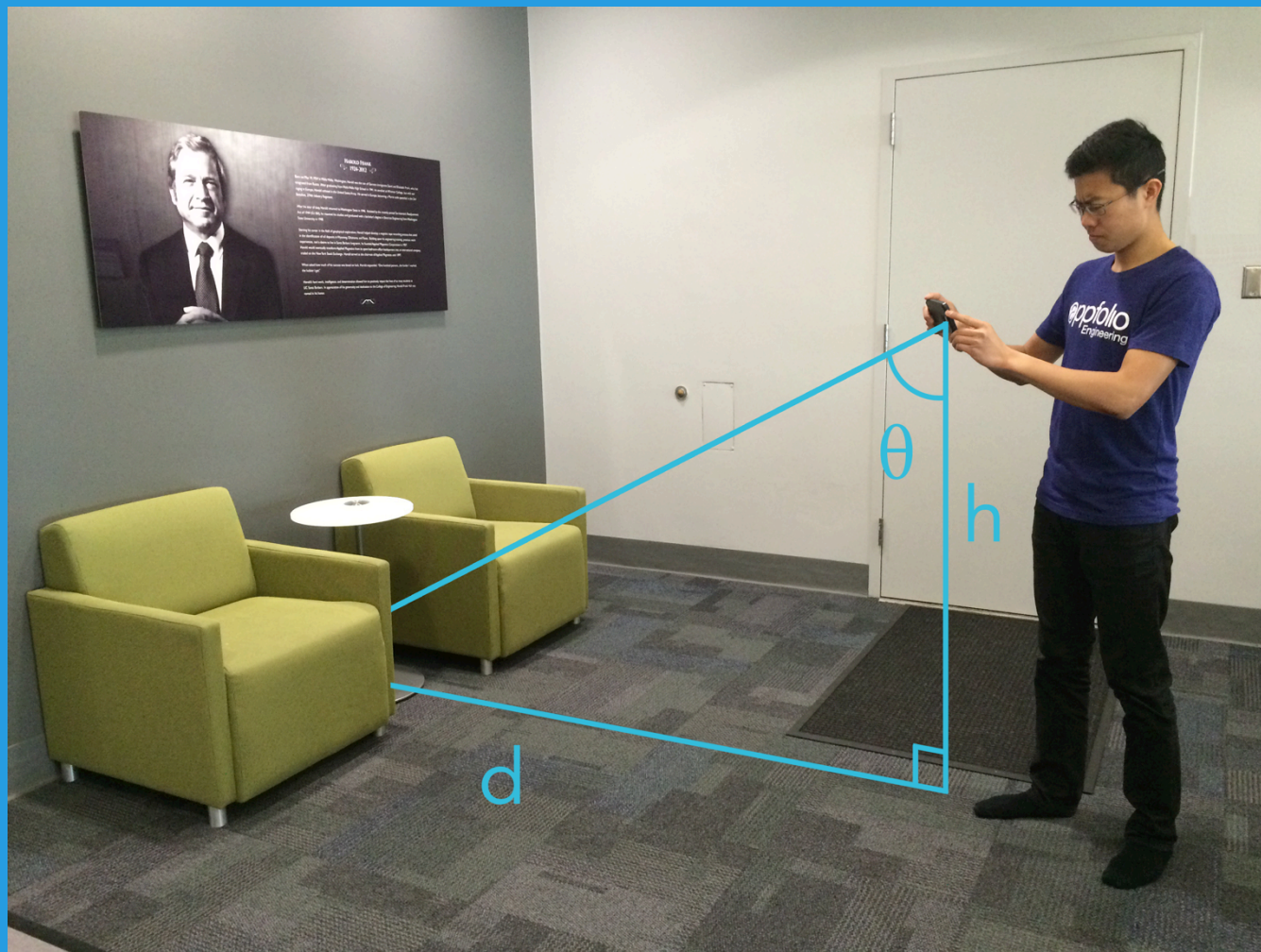




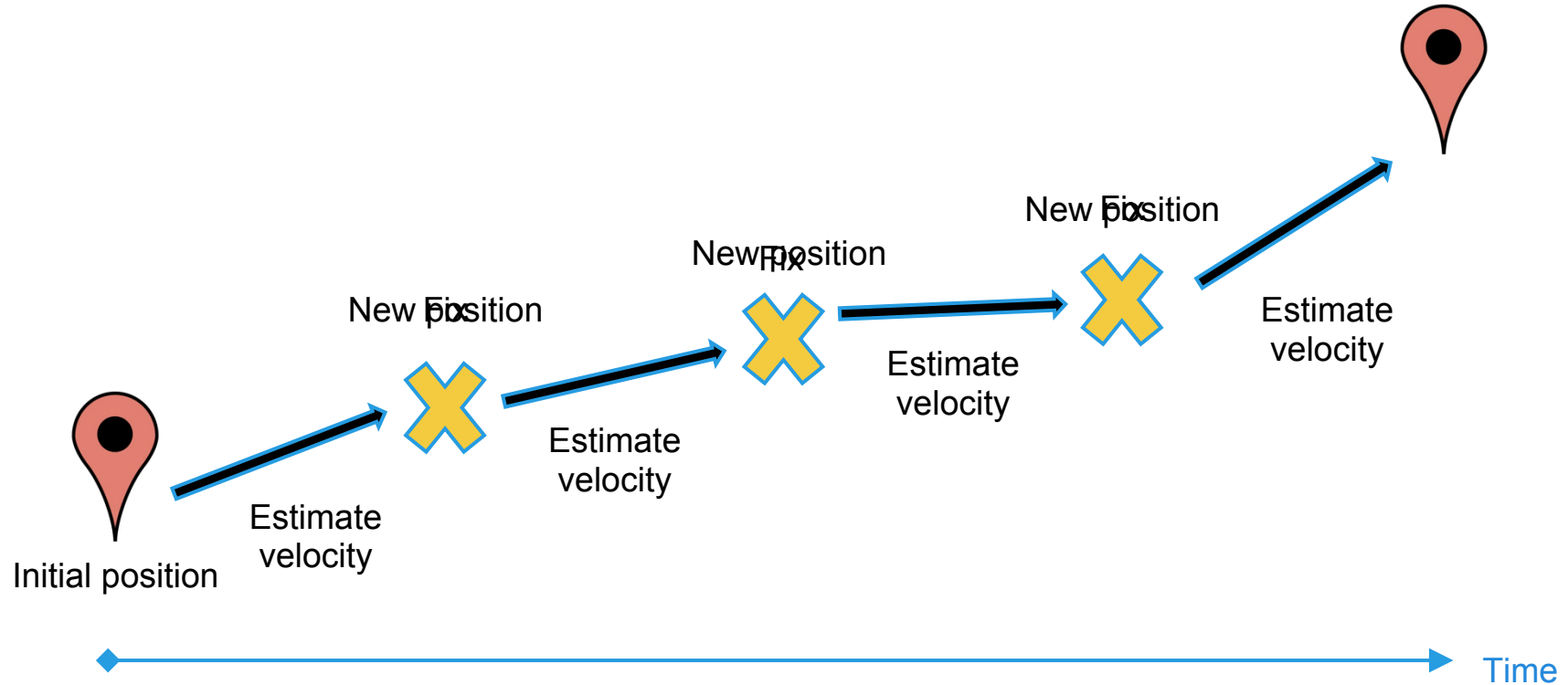
What about WiFi?



WiFi signals in an apartment

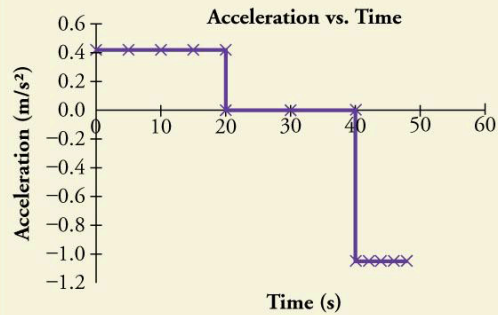


Dead Reckoning

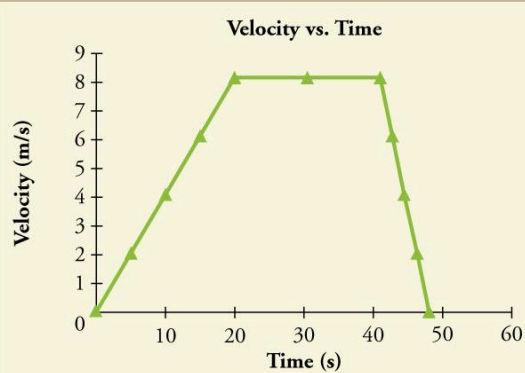


Accelerometer and Gyroscope

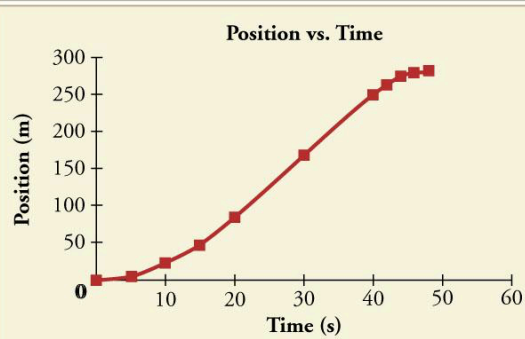




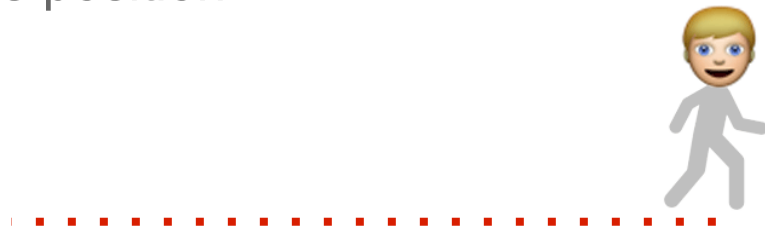
Tom's change in speed or direction



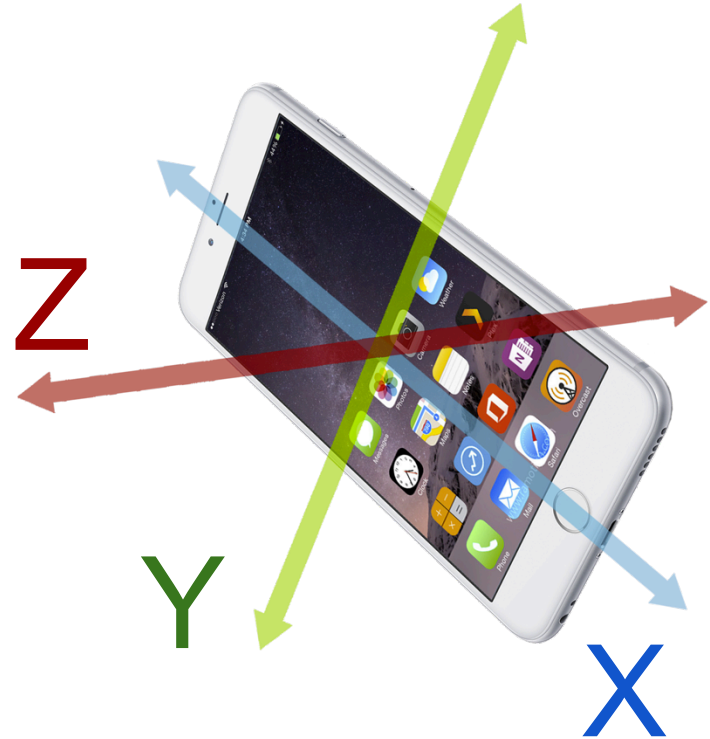
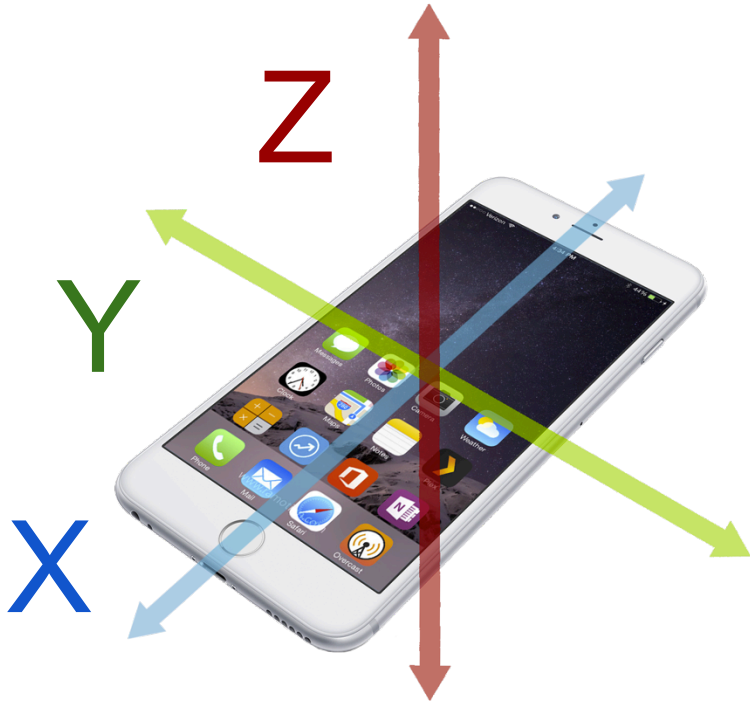
Tom's walking speed and direction



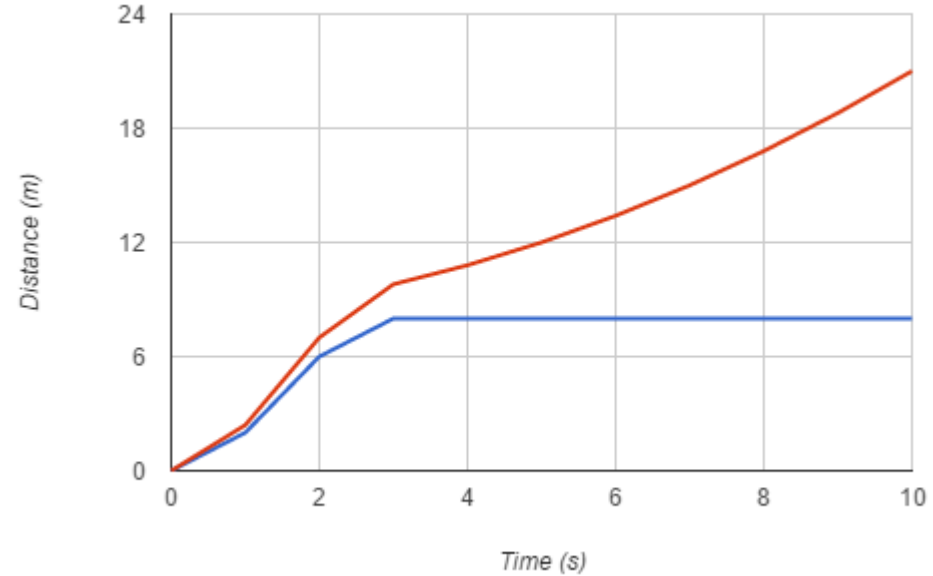
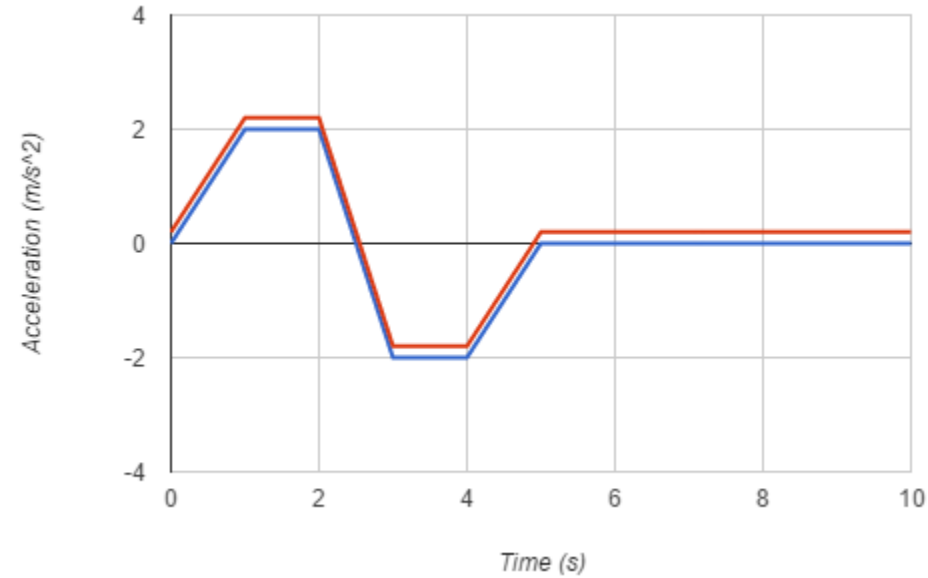
Tom's position



Accelerometer axes on a phone

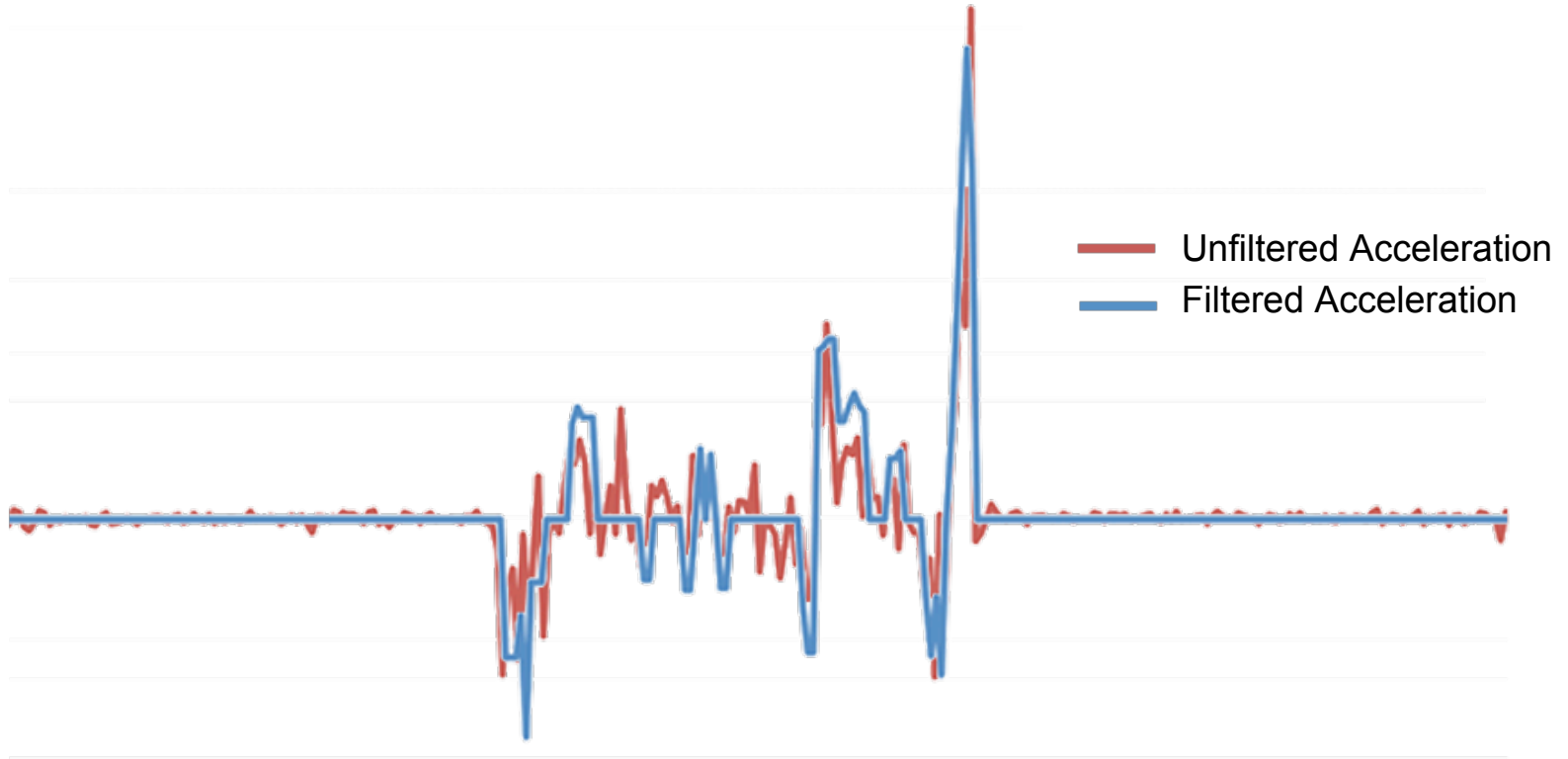


Acceleration



0.2 m/s^2 acceleration error causes the position to be off by 10 meters in 10 seconds

Reducing Noise

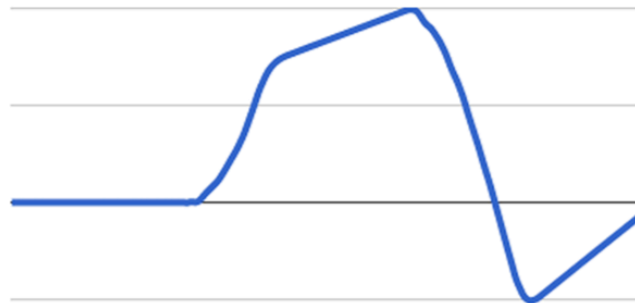


Velocity

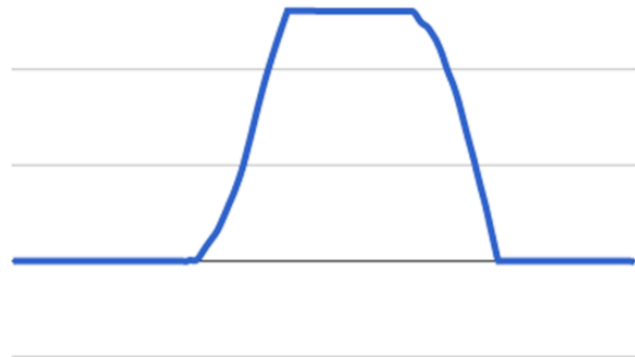
Position



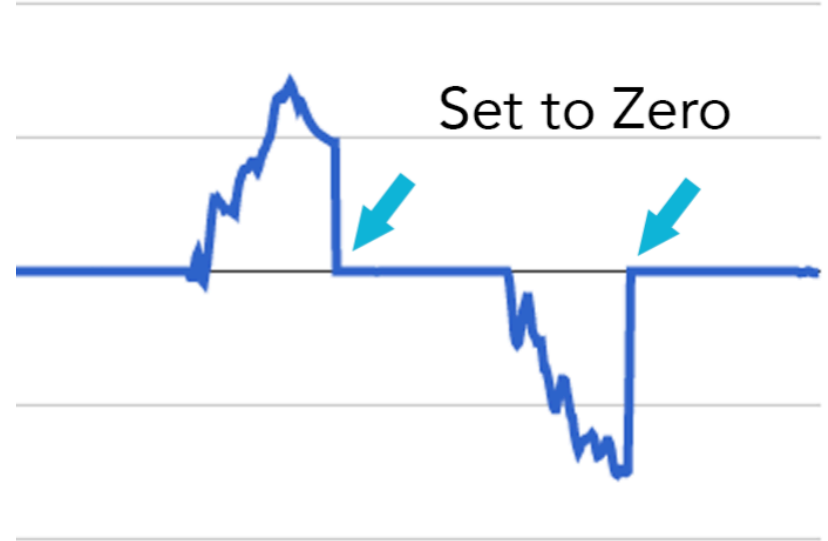
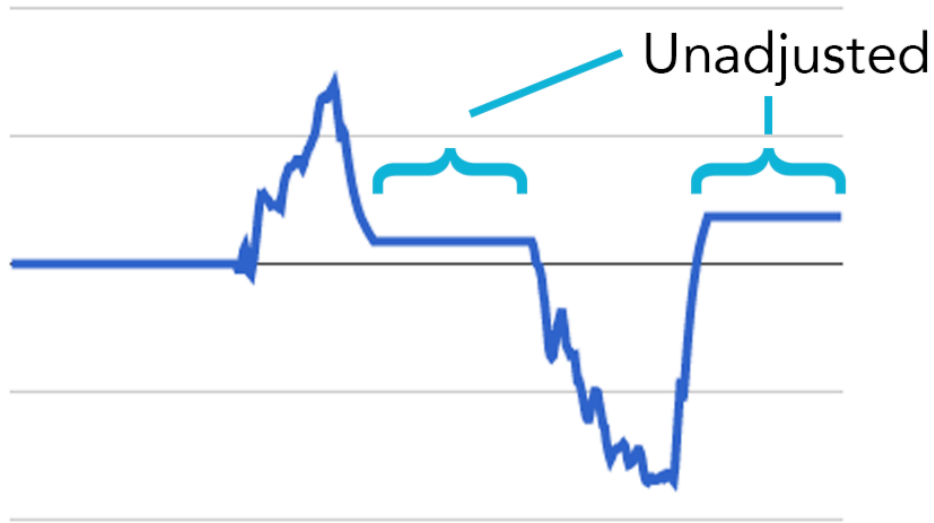
Raw



Fixed

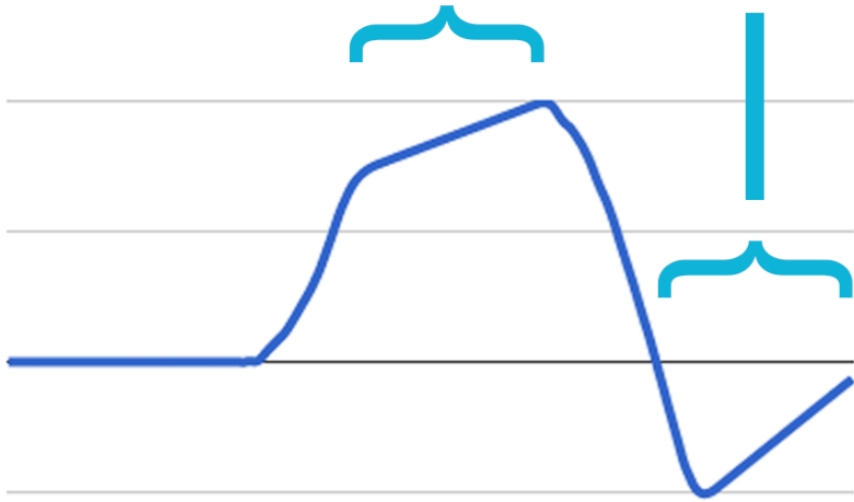


Drift in Velocity

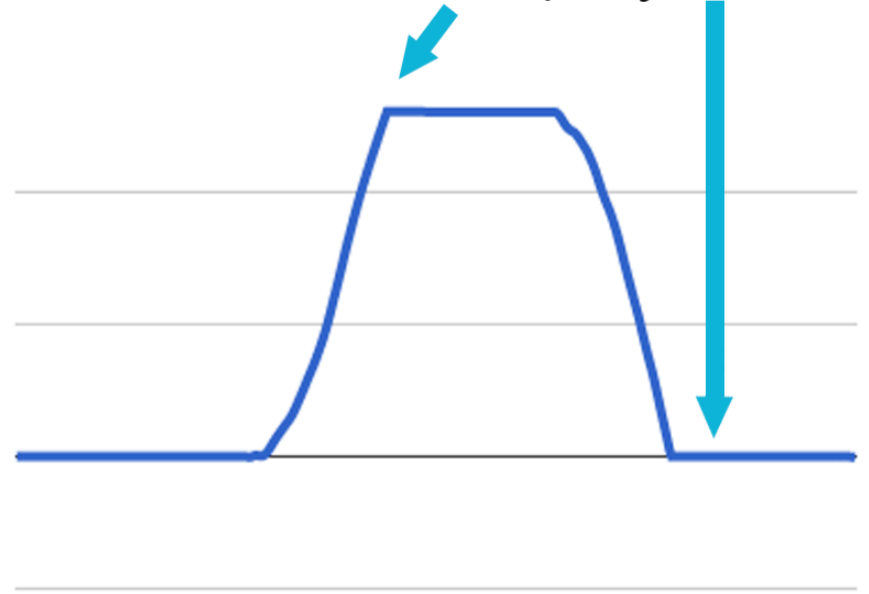


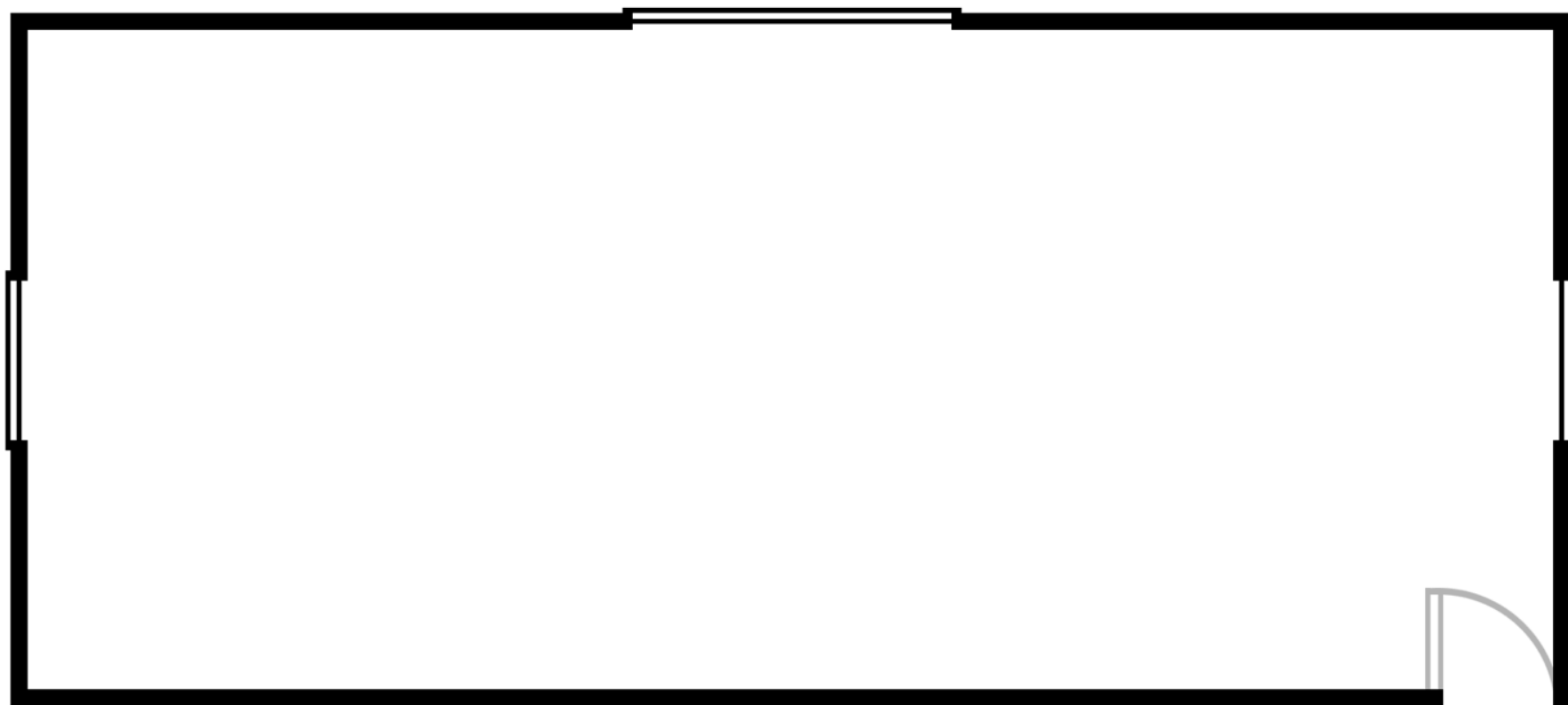
Drift in Position

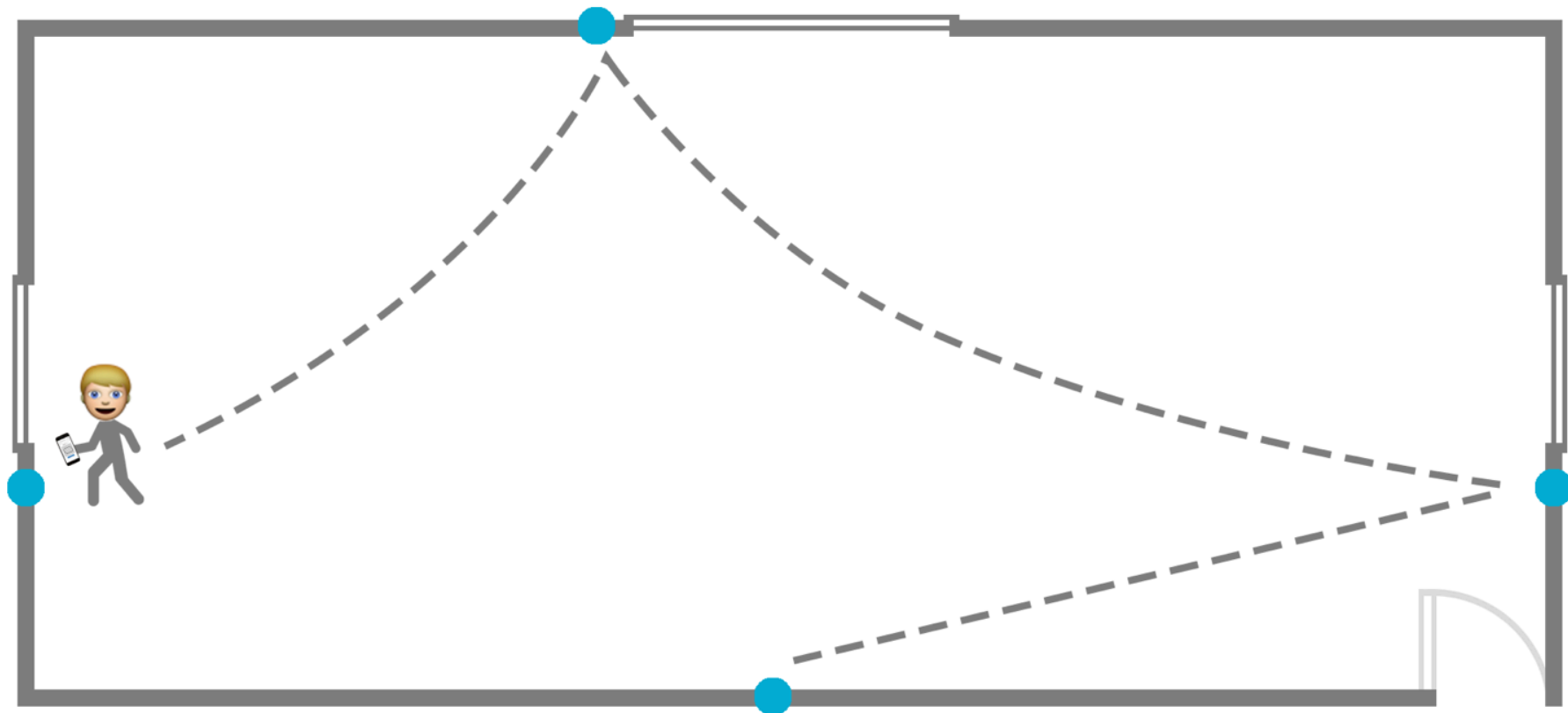
Position Drifting

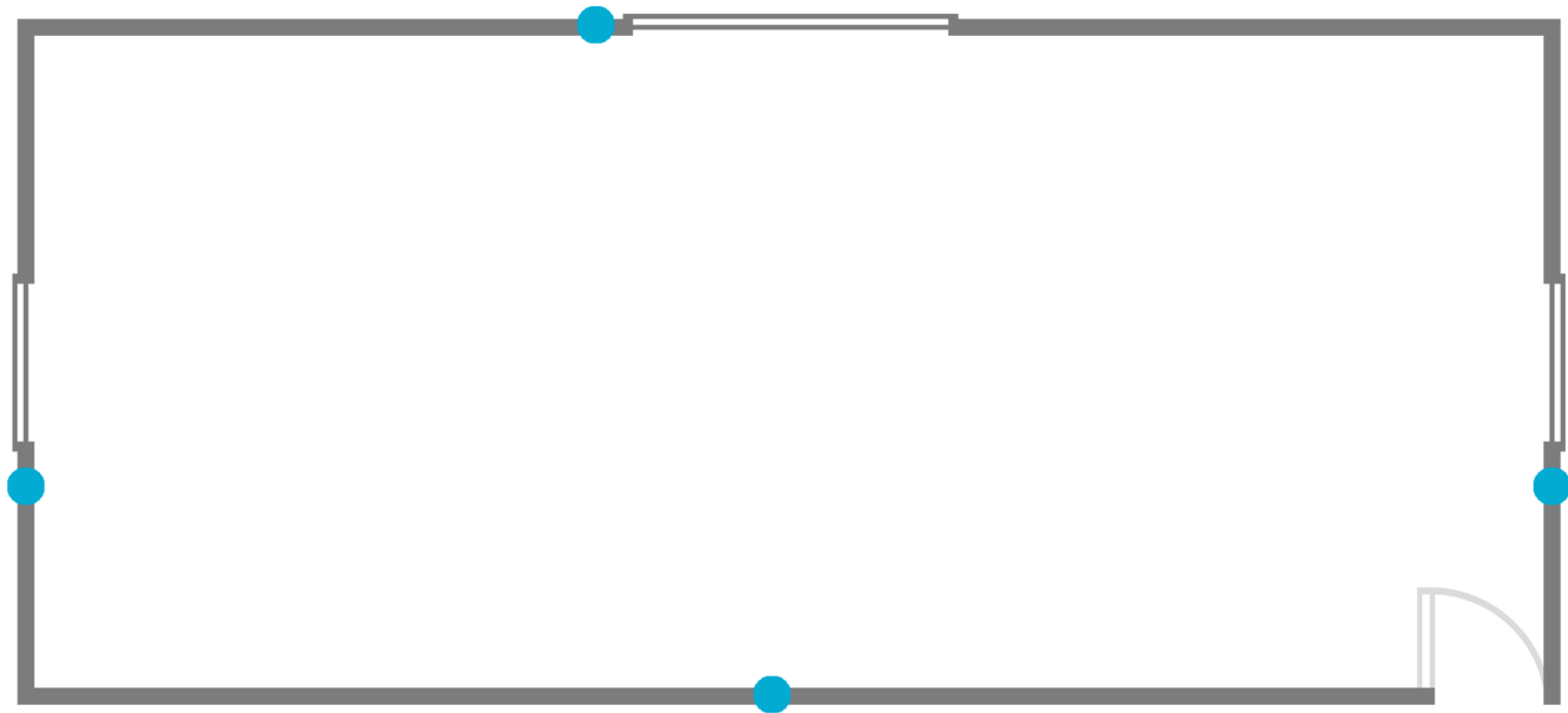


Properly at Rest



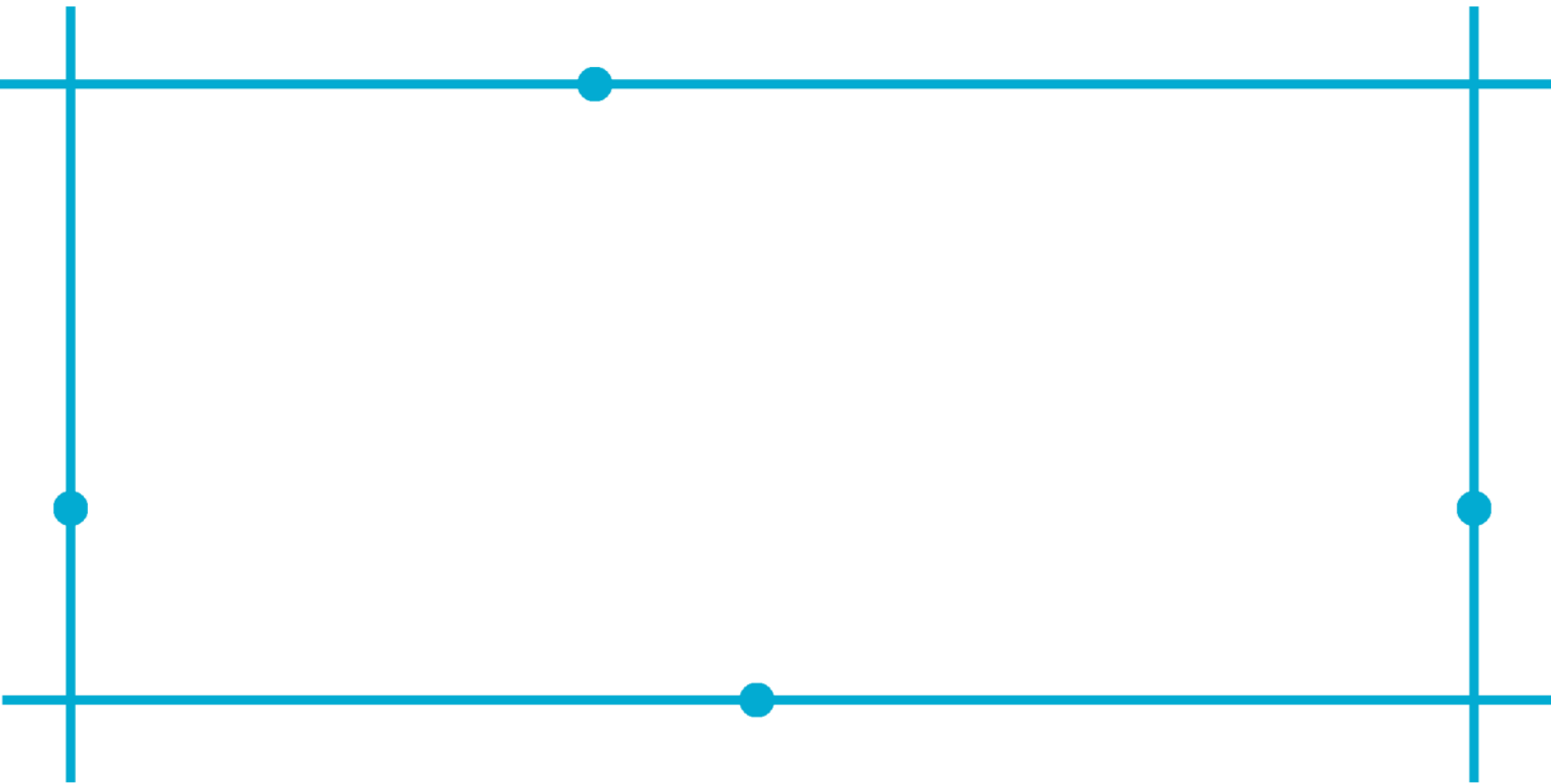


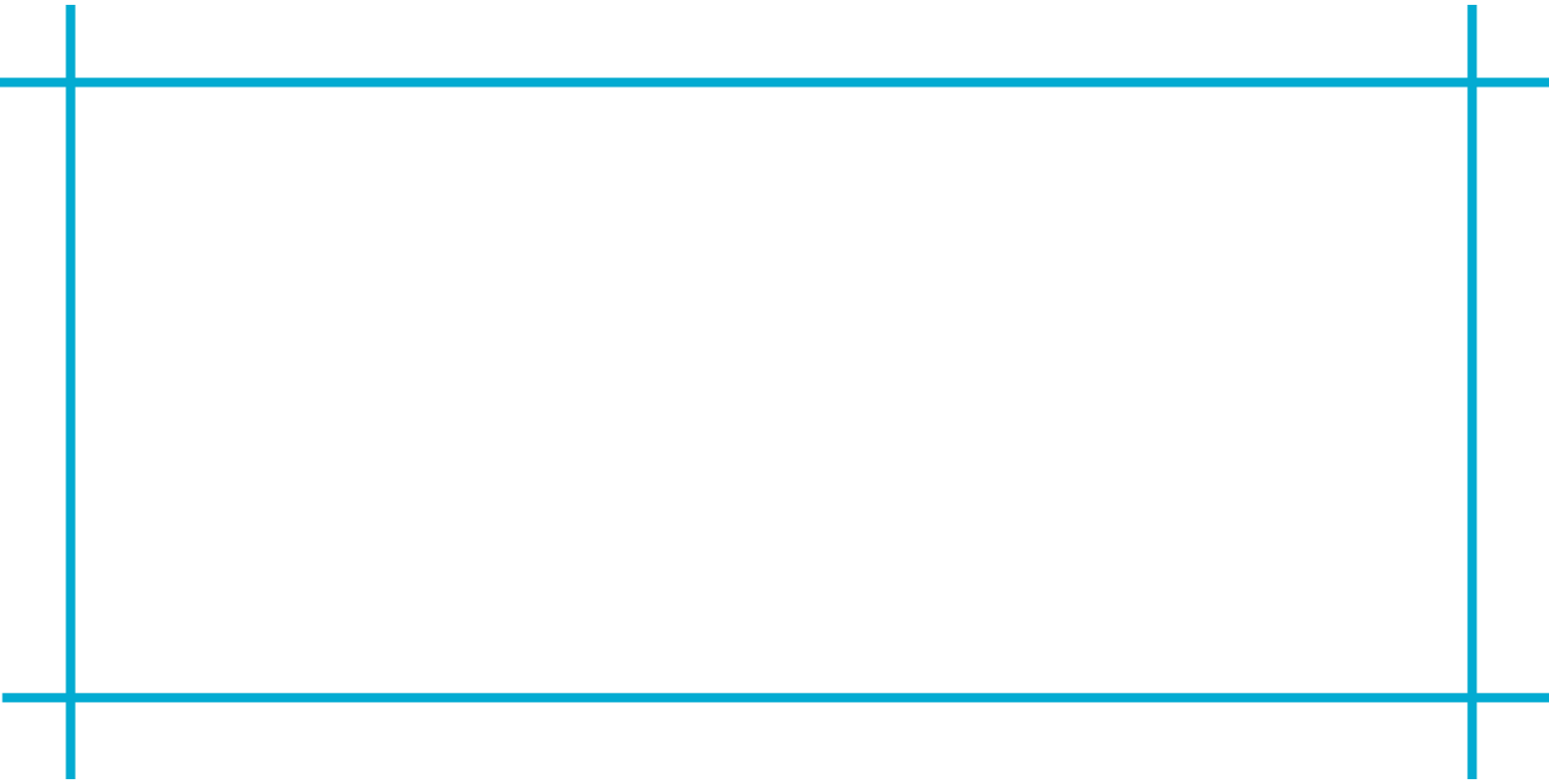


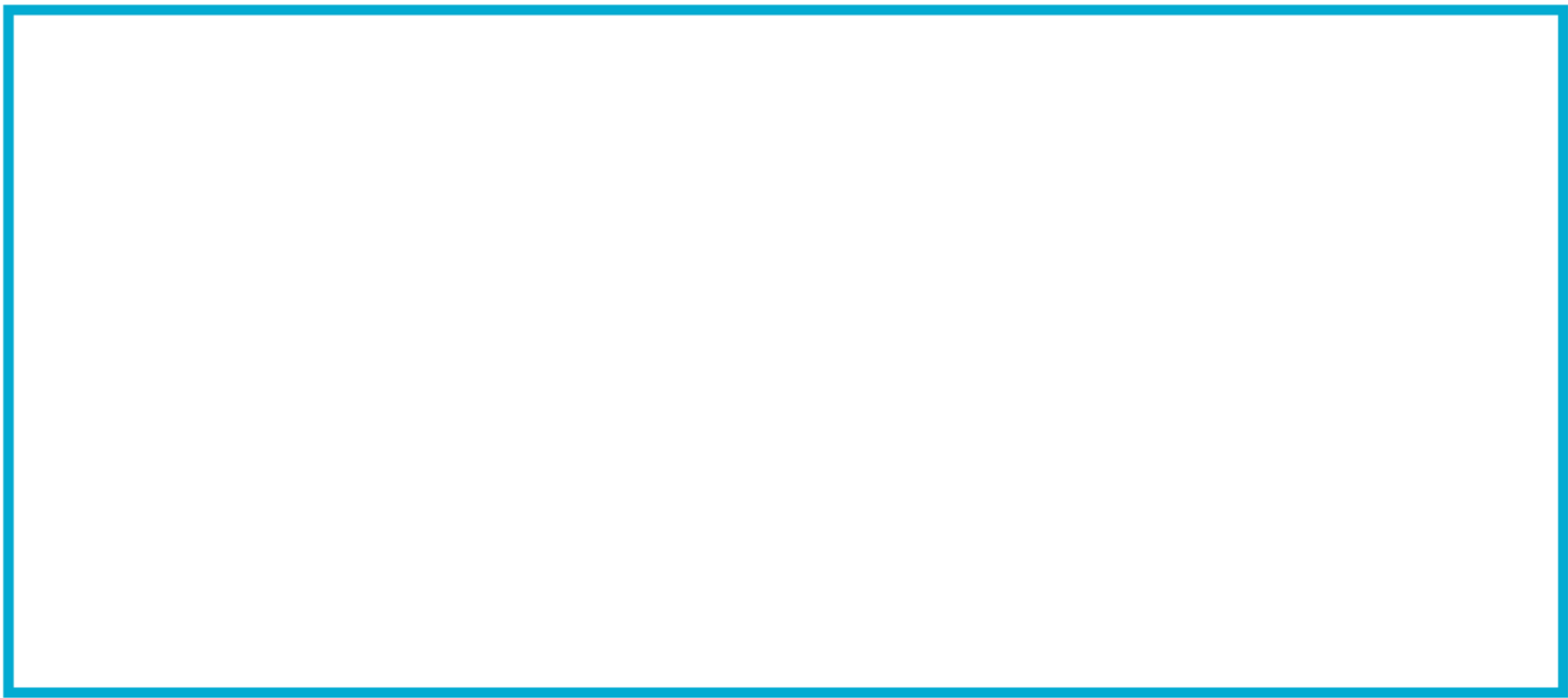


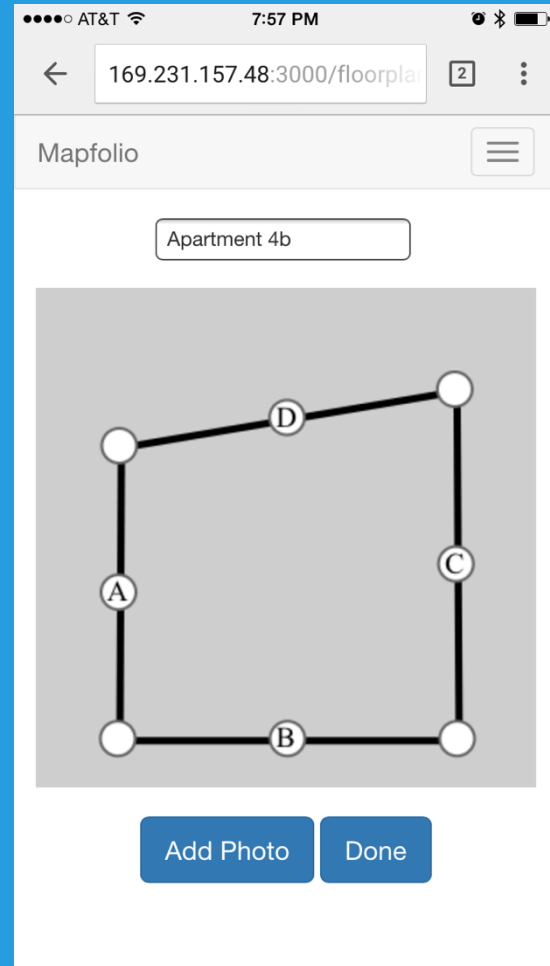
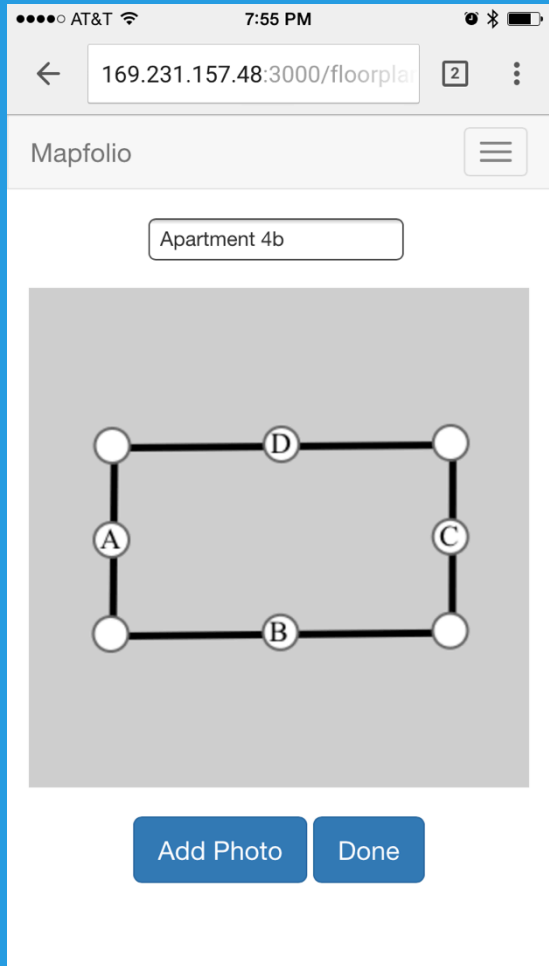








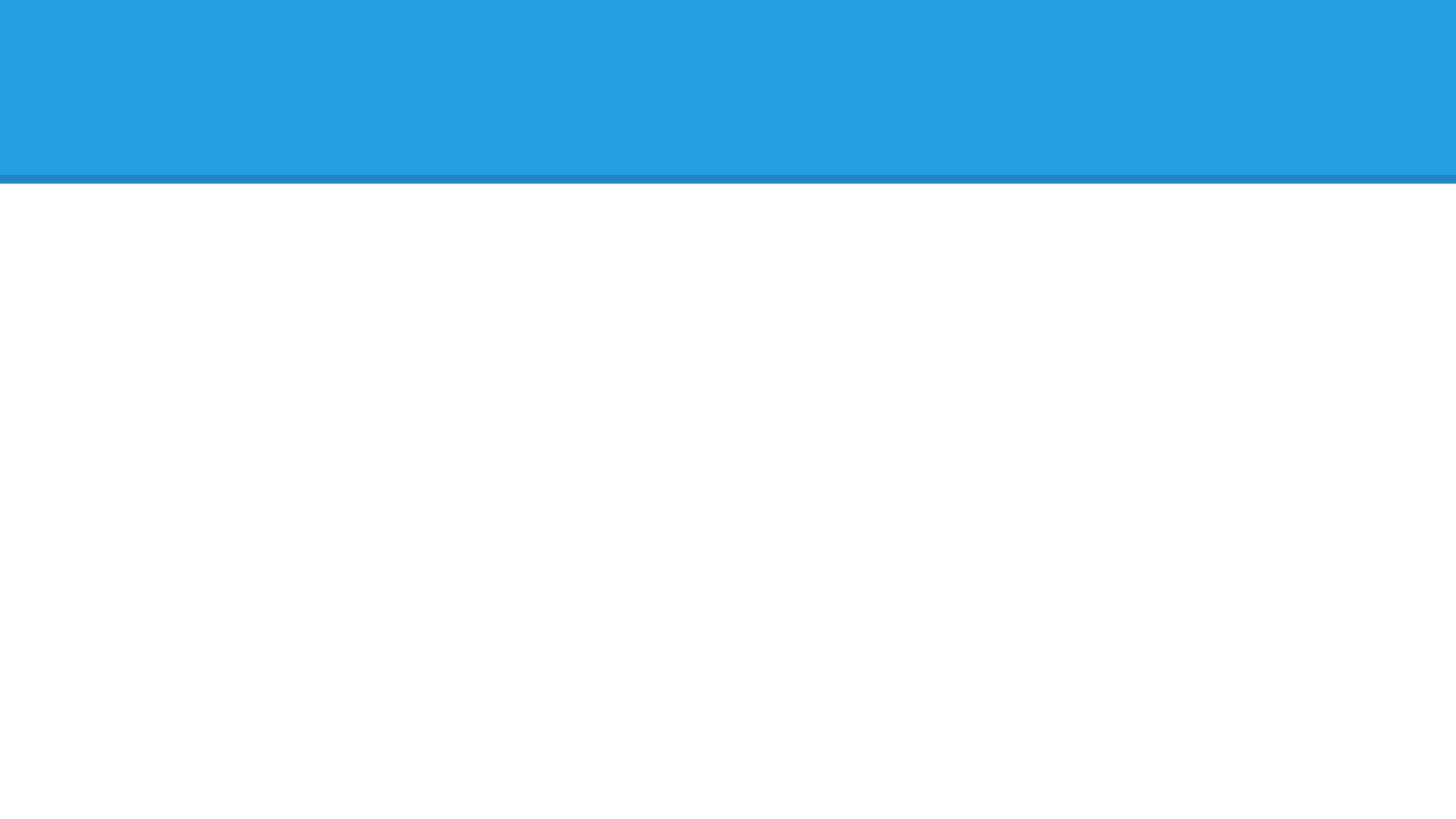




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- Andrew Mutz
- Brynjar Gretarsson

Mapfolio



Rotations using gyroscope data

