Part 1: Bias and Noise

Taking $n = 5000$ samples and Noise as variance
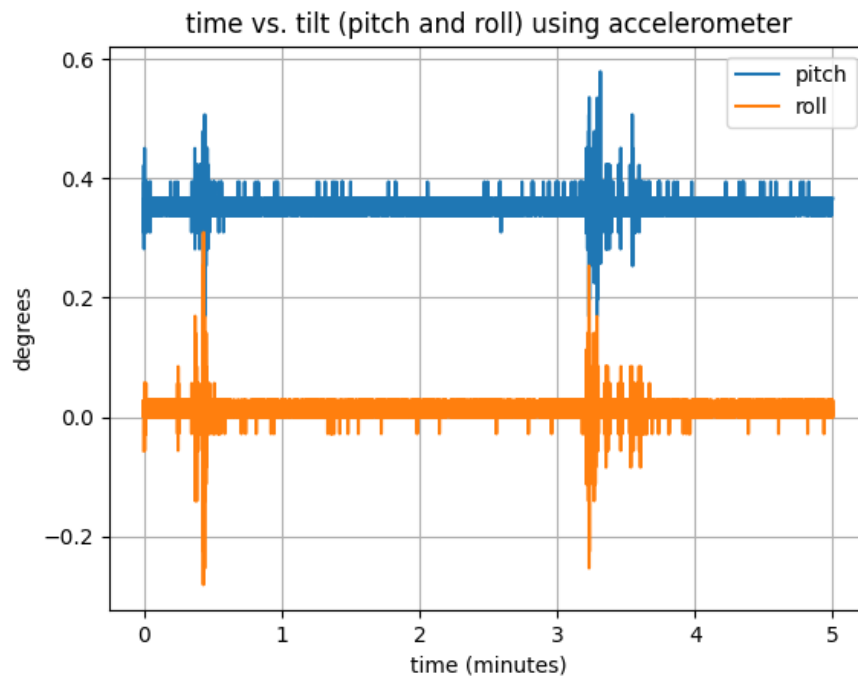
Accelerometer

- Bias: [0.04230337829589844, -0.08600277709960938, 9.739888958740234]
  - Rounded: [0.0423, -0.0860, 9.74]
- Noise: [4.58502718248954E-4, 9.69409790625795E-5, 5.685786921105773E-5]
  - Rounded: [4.59e-4, 9.69e-5, 5.69e-5]
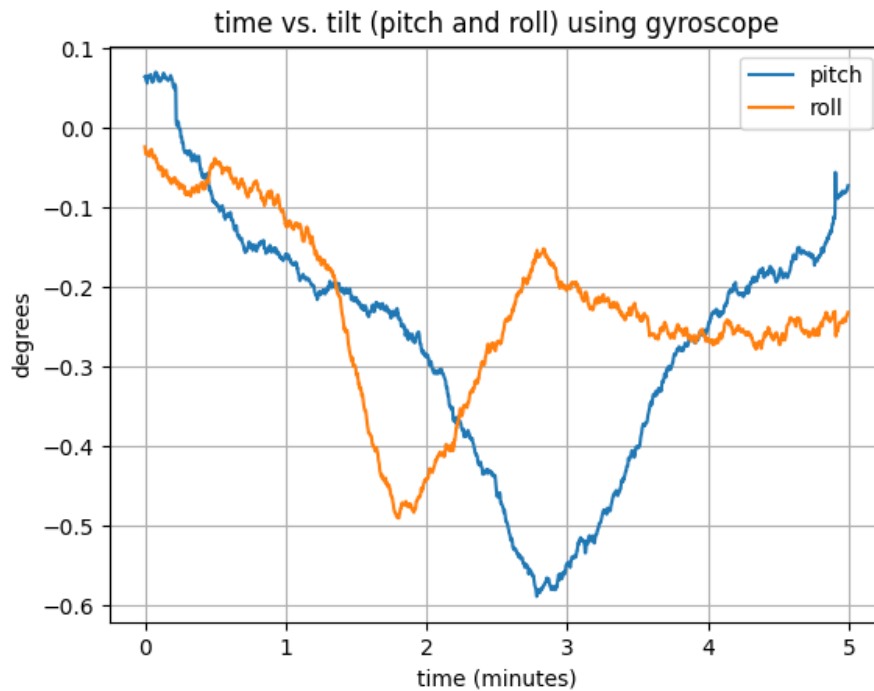
Gyroscope

- Bias: [2.274169921875E-5, 3.23486328125E-6, -1.08642578125E-6]
  - Rounded: [2.27e-5, 3.23e-6, -1.09e-6]
- Noise: [2.3132960960268976E-7, 1.7802209034562111E-7, 1.7246551126241682E-7]
  - Rounded: [2.31e-7, 1.78e-7, 1.72e-7]

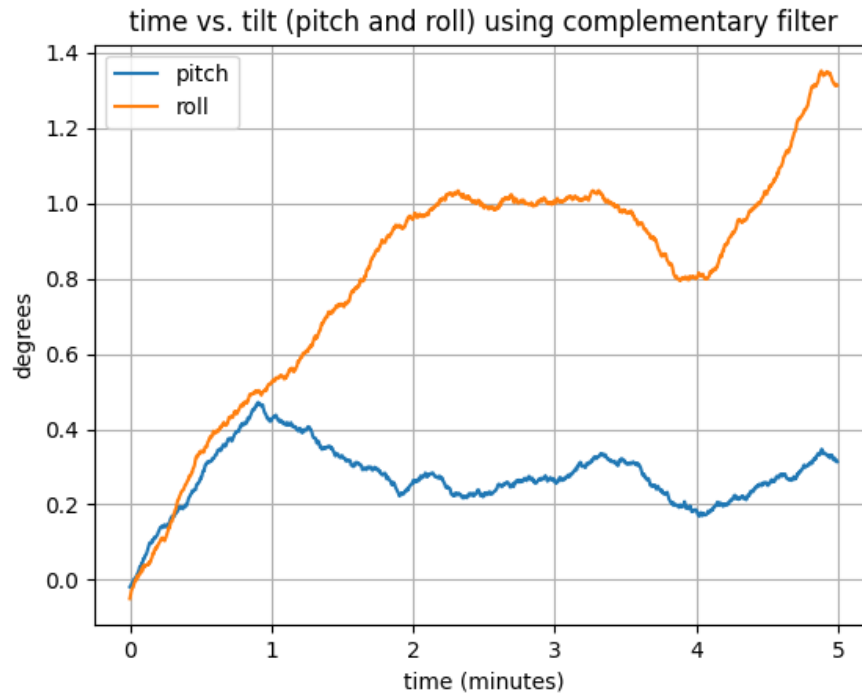## Part 2: Plot the tilt over the duration of 5 minutes

Only Accelerometer

Only Gyroscope

Using both Accelerometer and Gyroscope with Complementary Filter

Part 3: Is a video

Note that the order of angles for tilt are [Pitch, Roll] and uses a complementary filter.

Video is on Canvas and also here:
https://github.com/nowei/cse562/blob/master/hw_submissions/cse562hw2.mp4

GitHub repo: https://github.com/nowei/cse562/tree/master/hw2