Varun Iyer

Sheetal Jena

Johncarlo Cerna

Quiz #2

Methods and Overview:

We took a Nexus 7 (2013) Tablet, and began walking in a straight line from a corner of Varun’s house to another. The surface was level throughout, and the distance covered was approximately 100 m. The x-axis is positive to the left, the y-axis is positive to the bottom, and the z-axis is positive away from the phone (towards the direction its camera is facing) as depicted. The data was stored using Android Debugger Tools and Excel. The data was gathered by facing the tablet upward and walking in a straight-line path, mimicking the pattern of a robot. We were also able to access the accelerometer values in 3-dimensions.

In this case, we should expect the X values to be positive since there will be a gravitational acceleration, the Y should average around zero since they will be influenced by left and right motions, and the Z should be negative for some instances since we are going forward with the phone’s display facing the same direction.

Looking at the graph, we see that initially there were some spikes in the gravitational acceleration (the x value). This is because the nexus was on a table at first and then had to be lifted up in order to move it to the starting position and begin the simulated walk. As we see throughout the rest of the graph, there are no spikes or gaps present, the acceleration in each dimension seem to be fairly constant. Also, occasionally some values may appear too high, but that’s only because of the small oscillations undergone by the arms that account for these spikes.