

Homework 1

ECE 2066: How the iPhone Works

Fall 2018 (10 points)

1. The text file “testdata.dat” contains 250 values captured via Bluetooth on an old iPhone 5c that are valued between 0 and 1. The “load” function in MATLAB can read this data and store it in a vector.
 - a. Using built-in MATLAB functions, report the minimum and maximum values in this dataset, as well as the mean, median, and mode of the data.
 - b. Use the “histogram” function to plot a histogram of the data, divided into 20 equally spaced sections.
2. Take an iPhone. Doesn't have to be yours. Doesn't actually have to be an iPhone. Download an app that will display the waveform of a microphone signal (e.g. an oscilloscope), NOT the signal's loudness (which the Voice Memos app records). Take a screenshot when you make the sound “shhhhhhhhh”. Take another screenshot with the sound “EEEEEEEEEE”. Comment on the difference.

Turn in answers, plot, and code for 1a and 1b.

Turn in pictures and your answers for 2.

Due by hard copy in class on Wednesday, September 5th at 2pm. Include your name and computing ID.