EELE 466 Class Project

Task #1 Assignment

Due Wed April 1, 2015

For the class project in EELE 466 we will implement the code developed by Sebastian Madgwick as described in the document *An Efficient Orientation Filter for Inertial and Inertial/Magnetic Sensor Arrays.* We will also explore the use of Matlab's HDL Coder toolbox that will assist in porting this code to VHDL.

For Task #1 of the project, you will need to partition the supplied Madwick Matlab code into code blocks that are separated by the vector normalization functions. Your task will be to abstract these code blocks into appropriate function calls that can be used by Matlab's HDL Coder toolbox.

Create the Matlab functions that abstract the original Matlab code *Madgwick_original_matlab.m* into the partitioned Matlab code *Madgwick_segments.m*.

You will need to upload the code to D2L for the Matlab functions found in *Madgwick_segments.m*