EE 491 Weekly Report   DEC15-17   Week 11 (4/6/15-4/12/15)

Advisors: Dr. Ravi Hadimani and Neelam Prahbu   Client: Iowa State University
Members (roles): Marion Okoth (Team Leader), Elizabeth Clarkin (Website) and Matthew Mulloy (Weekly Reports)
Project Title: Magnetic Sensor Design.

Weekly Summary

The main goals this week was to begin consolidation of code and data for our final presentation. Suggestions were made by our advisors what to include and what was still left to do.

Meeting notes:

4/6   Group Meeting

Duration: *30 min*   **Members Present:** *All*
Neelam was present

- Website updating and fixing
- COMSOL simulation review

4/10   Group Meeting with Advisors

Duration: *60 min*   **Members Present:** *All*

Purpose and Goals:
Discussed COMSOL results for second round of simulation, presentation requirements
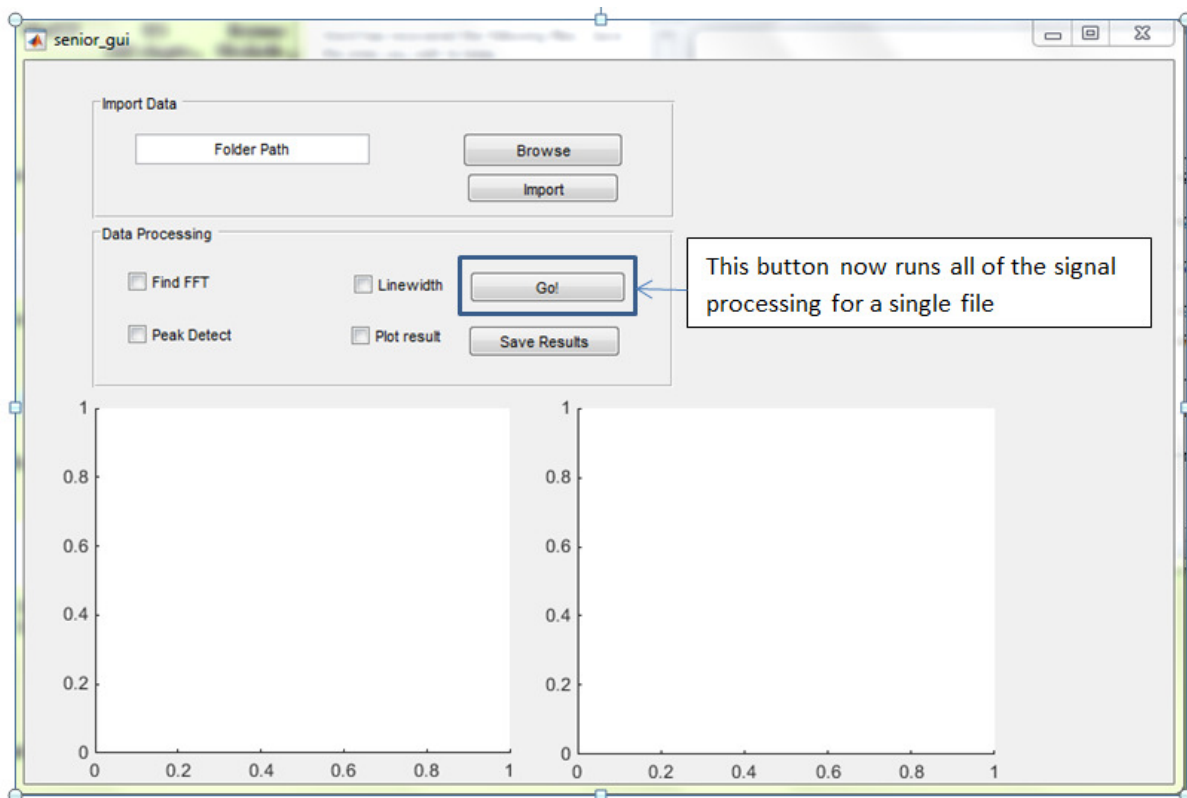
- COMSOL presentation
    - Include mesh parameters
    - More accurate geometry definitions
    - Clearer geometry descriptions
    - Fix data on one graph
    - Axial verse radial magnetic flux
    - Parameter changes in each comparison
- Measurements presented
    - Geometry comparison in air
    - Geometry comparison with core
    - Current setup in air
    - Current setup with core
    - Geometry presented by project illustration in air
    - Geometry presented by project illustration with core
    - Shielding on ends to reduce flux lines with air

- o Shielding on ends to reduce flux lines with core
  - o Shielding relationship with block geometry
  - o Shielding relationship with cylinder geometry
- Hysteresis measurements
- GUI layout and code
- Simulation conformations

Code Progress

Code Piece	Status
Single file Signal Processing	90% just need to set it to get the data from the file and to write the linewidth and peak to a file
Graphing	33% the spectrum plot is finished the multi-file plots are hung up
GUI	35% the layout is complete but the functions need to be linked up to it.
Read list of file names from a folder into an array so that the code may operate on each	60% just having trouble passing the array into the functions

What is left: Get the read and write functions working, finish graphs, and link the functions to their GUI. GUI (only the buttons labeled "Go!" and "Import" currently do anything.

Pending issues

1. Presentation of code
2. Hysteresis
3. COMSOL updating for presentation

Plans for next week
1. Matt: Will finalize COMSOL presentation with inclusion of two new comparisons
2. Elizabeth: Will finalize code for presentation
3. Marion: Will perform sensor calibration measurements with Neelam and prepare for presentation

Individual Contributions (this week)
Matthew Mulloy: Attended the meetings, weekly reports, COMSOL simulation, presentation simulation (10.5 hrs.)
Elizabeth Clarkin: Attended the meetings, coding, GUI (11 hrs.)
Marion Okoth: Attended meetings, measurements, project plan (5.5 hrs.)

Total contributions for the project
Matthew Mulloy (88 hrs.)
Elizabeth Clarkin (100.5 hrs.)
Marion Okoth (71.5 hrs.)