P.U.R.E. Research Plan Form

Mentee Information
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Fall 2016 Research Plan
• Write a brief outline of your research plan:
  • The first task at hand is to familiarize myself with the new frameworks I will be working with. These include PowerGrid, ISMRMRD, and the HDF5 format. PowerGrid is software developed by the Magnetic Resonance Functional Imaging Lab at UIUC for MRI reconstruction on GPU’s and CPU’s. Currently the software processes data and outputs images in the MATLAB MAT file format, but the goal this semester is to have PowerGrid integrated with the ISMRMRD library and have the I/O use the HDF file format.
  • The core goal will be to integrate ISMRMRD file format API with PowerGrid and to have images produced stored in the ISMRMRD/HDF5 format. If this is successful, then I can begin to test this on multiple datasets to ensure that it runs smoothly.
  • To view the images through a means other than MATLAB, I will use the python libraries provided by ISMRMRD project to provide an alternative to MATLAB. This will allow us to see if any error is the fault of the production software or the display software.
  • A stretch goal will be to unit test critical pieces of the code if ISMRMRD integration is completed early.

• What do you hope to learn and achieve by the end of the semester?
  • I aim to learn and understand the PG and ISMRM libraries that I will be working with and apply this experience to working with new and unfamiliar API’s in the future.
  • I want to gain experience with unit testing on larger code bases, and the opportunity to do that on the PG code will help.

Mentee Signature: Nishant Maniam  Date: 21 September 2016
Mentor Signature:  Date: 09/21/16