

November 29, 2019

RE: Master Project on Real-time 2D Cardiac Magnetic Resonance Imaging (MRI)
Boston Children's Hospital, Harvard Medical School, Boston, Massachusetts, USA

Cardiovascular MRI Center at Boston Children's Hospital and Harvard Medical School is looking for a graduate student in the area of real-time 2D cardiac MRI. The successful candidate should have background in mathematics, signal processing, and computer programming including MATLAB and C++.

Real-time 2D imaging is important in cardiac MRI for fetuses, and adult patients with arrhythmia. High spatial and temporal resolution 2D real-time images are necessary when either the ECG signal is not available or there is a severe arrhythmia. In this project, we aim to develop an accelerated real-time 2D image acquisition scheme to acquire high spatial and temporal resolution images of the heart for the evaluation of cardiac function and blood flow in fetuses and adult patients with arrhythmia.

Task List

- To review the relevant literature.
- To develop the accelerated real-time 2D imaging scheme in MATLAB and C++.
- Evaluate the development on adult human subjects and fetuses.
- Report the results at Journal of Magnetic Resonance in Medicine.

Requirements

- Solid background in mathematics, signal processing, and computer programming.
- Scholarship and/or own sufficient financial resources to cover the living expenditure (\$12,000-\$15,000).
- Starting the project in April 2020.
- The project will take 6-8 months for Master Thesis.

Candidates with an interest in this position should contact Mehdi Hedjazi Moghari at Boston Children's Hospital by mid-January 2020:

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