Postdoctoral Research Positions  
**Machine Learning / Computational Methods for Diffusion MRI**

**Position description**

Machine learning has a unique potential for processing complex neuroimaging data. The impact of machine learning methods can be particularly significant for data from fetuses and children, where existing computational methods are highly inadequate. Therefore, machine learning may enable accurate quantitative assessment of normal and abnormal early brain development, which has critical and wide-ranging applications in medicine and neuroscience.

The goal of this NIH-funded project is to develop and validate new computational methods, mostly based on machine learning, for analyzing brain diffusion MRI data from fetal, neonatal, and pediatric age groups. It is anticipated that the methods developed in this project will vastly improve upon the existing methods and will have a profound impact on the field.

The project has several aspects, listed below. You will have the opportunity to work on aspect(s) that match your background and interests.

- Data harmonization for diffusion MRI.
- Machine learning-based segmentation and registration methods.
- Application of diffusion MRI to study the impact of congenital heart disease on fetal brain development.
- Motion correction for fetal brain MRI.

*** We offer higher salaries than most other labs.

**Location**

This research will be conducted in the Computational Radiology Lab at Boston Children’s Hospital (BCH), Harvard Medical School (HMS). The US News ranking has placed BCH at #1 in pediatric hospitals and HMS at #1 among all medical schools. Our lab has close collaborations with many research labs at Harvard Medical School as well as prominent labs outside Boston.

**Requirements**

**Minimum requirements**

- Ph.D. in Electrical or Biomedical Engineering, Computer Science, Medical Physics, or a related field.
- Knowledge of machine learning.
- Good programming skills.
- Good communication skills.

**Additionally useful qualifications**

- Knowledge and hands-on experience in image processing / computer vision.
- Experience in medical image analysis and brain MRI.

**How to apply**

Please send an email and your CV to davood.karimi@childrens.harvard.edu.