# Multiple Postdoctoral Positions at Boston Children's Hospital and Harvard Medical School

**Position description:** The *Computational Radiology Laboratory (CRL)* directed by Prof. Simon Warfield at Boston Children's Hospital and Harvard Medical School has several immediate openings for highly motivated post-doctoral research fellows to develop motion-compensated image acquisition and reconstruction algorithms, motion-robust quantitative MR imaging techniques, and automated image analysis to compute imaging markers of disease from MR images of the brain and abdomen for projects funded by the National Institutes of Health.

The researchers will develop highly innovative imaging and image processing techniques and software tools to correct for motion and distortion, and reconstruct high-resolution images and estimate quantitative model parameters to generate markers of disease in using several quantitative MRI techniques. The researchers will have access to radiologists, MR physicists, a dedicated research 3T MRI, will have mentorship from an expert team of principal investigators, and will directly work with Assistant Profs. Onur Afacan and Sila Kurugol, and will attend courses and seminars offered at Boston Children's Hospital, Harvard Medical School, and Harvard Catalyst.

**About CRL:** The mission of CRL is improving our understanding of the structure and function of the brain and other organs of the human body, in order to improve our capacity to diagnose and treat disease. CRL is located at Boston Children's Hospital (BCH), which is ranked #1 in US News ranking of pediatric hospitals. Researchers at CRL are affiliated with Harvard Medical School, which is ranked #1 in US News ranking of medical schools. Boston is known as a hub for healthcare and medical innovations, and a beautiful city full of top-rank universities. Opportunities for cross-training and networking are enormous with several top-rank universities (Harvard, MIT, Northeastern, and Boston University), top-rank hospitals and medical research centers, and biotechnology and pharmaceutical companies in the neighborhood.

### Position 1: Postdoctoral fellowship in MRI physics and motion correction

*Minimum requirements*

- PhD in electrical or biomedical engineering, computer science, medical physics, or a related field with a research focus on biomedical image computing, magnetic resonance imaging
- Demonstrated record of high-quality publications in the field
- Demonstrated analytical, verbal, and scientific writing skills

*Highly desired qualifications:*

- Demonstrated record of high-performance scientific programming (Python, Matlab, and/or C++)
- Experience in one or more of the following is preferred:
    - Knowledge of MR physics
    - Experience in MR image acquisition
    - Experience in MR image reconstruction
    - Experience in pulse sequence development (ideally within Siemens IDEA)

## Position 2: Postdoctoral fellowship in machine learning methods for motion robust MRI

*Minimum requirements*

- PhD in electrical or biomedical engineering, computer science, medical physics, or a related field with a research focus on biomedical image processing/medical image computing, machine learning, computer vision, and/or magnetic resonance imaging
- Demonstrated record of high-performance scientific programming with python and/or C++
- Demonstrated record of high-quality publications in the field
- Demonstrated analytical, verbal thinking and scientific writing skills

*Highly desired qualifications:*

- Experience in machine learning/ deep learning in MRI
- Experience in MR image analysis
- Experience in semi supervised learning/ transfer learning/ active learning

## Position 3: Postdoctoral fellowship in motion robust quantitative MRI

*Minimum requirements*

- PhD in electrical or biomedical engineering, computer science, medical physics, or a related field with a research focus on biomedical image processing/medical image computing, machine learning, computer vision, and/or magnetic resonance imaging
- Demonstrated record of high-performance scientific programming
- Demonstrated record of high-quality publications in the field
- Demonstrated analytical, verbal thinking and scientific writing skills

*Highly desired qualifications:*

- Experience in machine learning/ deep learning in MRI
- Experience in MR image acquisition
- Experience in MR image reconstruction
- Experience in MR image analysis

**To apply:** Please send your CV along with a copy of a technical paper, the desired start date, a paragraph including statement of career goals and three references to Dr. Onur Afacan (onur.afacan@childrens.harvard.edu) and Dr. Sila Kurugol (sila.kurugol@childrens.harvard.edu)

Computational Radiology Laboratory, Boston, USA. http://crl.med.harvard.edu/