



Research Fellow, Artificial Intelligence/Cardiovascular MRI Physics

Institute: Beth Israel Deaconess Medical Center, Harvard Medical School,

Location: 330 Brookline Ave, Boston, MA

The Cardiovascular MR Research Center at Beth Israel Deaconess Medical Center and Harvard Medical School is pleased to announce multiple open Postdoctoral Fellow positions for highly motivated candidates interested in advancing the frontiers of cardiovascular MRI. Successful applicants will join an interdisciplinary team of imaging scientists, AI researchers, radiologists, and cardiologists working together to develop next-generation AI technologies for cardiovascular MRI.

As a postdoctoral fellow, you will lead technical projects in imaging science and AI, develop and execute project plans, and design, implement, and evaluate novel algorithms. You will also collaborate closely with our industrial and academic partners to translate new methods into clinical MRI systems and image-analysis software pipelines.

Our research center is equipped with a 3T Siemens Vida scanner and a high-performance NVIDIA H200 GPU cluster system, supporting AI research.

We are particularly interested in candidates with expertise or a strong interest in **AI algorithm development, MRI pulse sequence design, quantitative imaging**, and related fields.

The position is offered for a two-year term and may be extended based on satisfactory performance and the availability of NIH funds.

Primary Responsibilities:

- You will collaborate with other group members to design and develop innovative AI tools that improve cardiovascular disease imaging, with a focus on MRI data acquisition, reconstruction, and analysis.
- Develop novel AI tools to improve our ability to predict adverse outcomes in patients with cardiovascular disease by integrating multi-modality data, including cardiac imaging.
- Collaborate with scientists and our industry partners, Siemens Healthineers and Medis, to implement and integrate our AI models into clinical MRI scanners and image analysis platforms.
- Provide technical guidance to lab members on projects at the intersection of engineering, radiology, and cardiology.
- Conduct research in state-of-the-art deep learning models focusing on cardiac imaging and publish your novel findings.

Required Qualifications:

- Ph.D. degree in computer science, electrical engineering, or biomedical engineering with a focus on AI and MRI
- Excellent coding skills in Python.
- Strong hands-on experience with deep learning tools (e.g., PyTorch or TensorFlow-Keras).
- Documented history of completed software projects (e.g., GitHub)
- Familiar with recent developments in DL architectures, particularly Transformers, Diffusion Models
- Track record of peer-reviewed publications in AI
- Strong communication and writing skills.

Interested applicants should email their cover letter, CV, and the names of three references to Dr. Nezafat, rnezafat@bidmc.harvard.edu

