



Research Fellow at Harvard Medical School- Artificial Intelligence in Cardiovascular MRI

Institute: Beth Israel Deaconess Medical Center, Harvard Medical School,
Location: 330 Brookline Ave, Boston, MA

Job Summary: Cardiovascular MR Center at Beth Israel Deaconess Medical Center and Harvard Medical School has an exciting opportunity to join our team as a research fellow. You will be part of an interdisciplinary team of imaging scientists, AI scientists, and cardiologists to develop next-generation cardiovascular MR technologies. As a research fellow, you will lead technical projects in imaging technology and be responsible for creating project plans and implementing and evaluating new imaging sequences and ML/AI algorithms. You will also work closely with our industrial and academic partners to implement your new methods in clinical MRI systems.

The position is offered for two years and may be extended based on satisfactory performance and availability of funds.

Primary Responsibilities:

- Lead and collaborate with other group members to design and develop innovative AI/ML tools to improve cardiac imaging, focusing on MRI data acquisition, reconstruction, and analysis.
- Develop novel AI/ML 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 with our industry partner, Siemens Healthineers, to implement and integrate our AI/ML models into clinical MRI scanners.
- 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 or MRI physics
- Prior experience in MRI method development
- Excellent coding skills in C++ and Python. Skills and ability to quickly prototype in Python are a must.
- Documented history of completed software projects (e.g., GitHub)
- Familiar with model ML/AL algorithms (e.g., Transformers, Diffusion Models)
- Track record of peer-reviewed publications in AI/ML with at least one first-author peer-reviewed publication
- Strong hands-on experience in computer vision, signal processing, and medical imaging
- Proficiency with medical imaging libraries like PyDicom, ITK, Open CV, and HDF5 format is a plus.
- 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



Advancing Cardiovascular Imaging Through Innovative Research

CARDIOVASCULAR
MR CENTER 

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