



Research Fellow / Research Scientist Generative AI, Vision-Language Models, and Medical Image Analysis



Location: Boston, MA	Affiliations: Boston Children's Hospital + Harvard Medical School	Start: As soon as possible
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POSITION SUMMARY

The Quantitative Intelligent Imaging Lab (QUINlab) at Boston Children's Hospital and Harvard Medical School is seeking a highly motivated Research Fellow, Research Scientist, or Master's-level researcher (if authorized to work in USA) to join a multidisciplinary clinical AI research program at Boston Children's Hospital and Harvard Medical School. The position will focus on advanced AI methods for medical applications, including vision-language models, large language models (LLMs), medical image analysis, and generative AI. The candidate will work closely with radiologists, clinicians, computer scientists, and clinical researchers to build clinically meaningful AI tools.

KEY RESPONSIBILITIES

- Develop AI pipelines for clinical text, radiology reports, electronic health record data, and medical images.
- Work with LLMs, vision-language models, multimodal models, and generative AI tools for healthcare applications.
- Run, adapt, and improve existing code for clinical NLP, LLM-based information extraction, and medical image analysis.
- Develop algorithms for segmentation, object detection, weak labeling, annotation-efficient learning, and multimodal disease characterization.
- Validate AI outputs against expert clinician annotations and clinically relevant reference standards.
- Prepare analyses, figures, manuscripts, abstracts, grant reports, progress reports, and future grant applications.
- Maintain reproducible code and documentation suitable for internal use and open-source release where appropriate.

IDEAL CANDIDATE

- Technically strong, highly motivated, and genuinely interested in learning. Good track record of publications.
- Able to take ownership of active projects and move them toward publication, grant deliverables, and clinical translation.
- Well suited for a recent Master's graduate, PhD graduate, or postdoctoral researcher with strong AI/ML skills.

REQUIRED QUALIFICATIONS

- Master's degree, PhD, or equivalent experience in computer science, biomedical engineering, electrical engineering, data science, medical informatics, computational imaging, or a related field.
- Strong programming skills in Python.
- Experience with machine learning or deep learning frameworks such as PyTorch, TensorFlow, Hugging Face, MONAI, or similar tools.
- Strong interest in generative AI, vision-language models, LLMs, medical image analysis, and clinical AI.
- Ability to work independently and collaborate closely with clinicians and technical team members.
- Excellent organizational and communication skills.

PREFERRED EXPERIENCE

- LLMs, vision-language models, prompt engineering, retrieval-augmented generation, clinical NLP, or structured information extraction.
- Medical image analysis, including segmentation, object detection, registration, image classification, weak supervision, or foundation models.

RESEARCH ENVIRONMENT AND HOW TO APPLY

QUINlab's mission is to transform diagnosis and treatment through intelligent imaging and analysis. We are based at Boston Children's Hospital, ranked #1 pediatric hospital in the U.S., and affiliated with Harvard Medical School, ranked #1 medical school nationally. Boston is a global hub for biomedical innovation, home to Harvard, MIT, Boston University, Northeastern, world-class hospitals, and a thriving biotech and pharma ecosystem. The opportunities for cross-training, collaboration, and networking are unparalleled. Beyond research, Boston consistently ranks among the top U.S. cities for quality of life, health, and happiness.

The candidate will join a collaborative research environment at Boston Children's Hospital and Harvard Medical School, working at the interface of artificial intelligence, medical imaging, clinical LLMs, multimodal learning, and pediatric medicine. Interested candidates should send a CV, a brief statement of research interests, and examples of relevant code, publications, or projects to: sila.kurugol@childrens.harvard.edu