UNIVERSITÉ Concordia UNIVERSITY

PhD Position in Diffusion Generative Modeling and Deep Learning for Medical Imaging (Radiology & Pathology)

We are inviting applications for a fully funded PhD position under joint supervision by Dr. Hassan Rivaz and Dr. Mahdi S. Hosseini at Concordia University, Montreal. The successful candidate will enroll in either the Department of Electrical and Computer Engineering (ECE) or the Department of Computer Science and Software Engineering (CSSE).

This PhD lies at the intersection of deep learning, generative modeling, and medical image analysis, with emphasis on: (a) design and optimization of diffusion-based generative models, (b) development of interpretable deep learning models for diagnosing and explaining cancer in radiology and pathology, and (c) applications involving histopathology, MRI, CT, and other medical imaging modalities. Adequate computational resources will be provided for conducting this project.

Candidate Requirement. You are a high-caliber student with demonstrated research potential and ideally be

- Excellent academic background with high CGPA in both BSc and MSc degrees in Computer Science, Electrical Engineering, Biomedical Engineering, or related fields
- Prior research experience and at least one publication (conference or journal) in relevant areas such as deep learning, generative modeling, medical imaging, or computational pathology
- Strong theoretical understanding of deep learning
- Proven hands-on experience with PyTorch and implementation of custom deep learning models
- Self-motivation, critical thinking, and willingness to work in an interdisciplinary research environment

A highly competitive PhD scholarship along with full tuition coverage will be provided to outstanding applicants.

Supervisors. This PhD position will be jointly co-supervised by
Dr. Hassan Rivaz is a Full Professor and Research Chair in Medical Imaging with Deep Learning. He leads the IMPACT lab, widely publishing in top-tier journals and conferences in generative models and multi-modal medical imaging. More details on his work are available on his Google Scholar profile.
Dr. Mahdi S. Hosseini is a Gina Cody Research Chair and Assistant Professor in CSSE at Concordia, an Adjunct Professor at McGill Pathology, and Affiliate Member of Mila–Quebec AI Institute. He leads the Atlas Analytics Lab, developing deep learning and computer vision algorithms for computational pathology. His recent honors include the Amazon Research Award (2023). See his Google Scholar for recent publications.

Expected Start Date. As early as possible in 2026.

How to Apply? Send the following documents to both hassan.rivaz@concordia.ca and mahdi.hosseini@concordia.ca using the subject line: [PhD-Diffusion AI: Your-Name]

- Cover letter (personalized and relevant to this position)
- Curriculum Vitae (CV)
- Unofficial transcripts from both BSc and MSc

Only shortlisted candidates will be contacted for interviews.

About Montreal. Montreal is a top-ranked city for students and a global hub for AI research, home to institutions such as Mila, IVADO, and the Applied AI Institute at Concordia. Leading tech companies like Amazon, Google, Meta, and Microsoft have AI labs here.

Equity and Diversity. We welcome applicants from all backgrounds and are committed to fostering an inclusive and diverse research environment.