

Postdoctoral Researcher in Artificial Intelligence for Human Digital Twin Development

Contract: 1-year fixed-term contract

Location: [Pervasive Computing for Health and Healthy Aging Lab](#) and [Baune](#), Montreal, Canada.

Job Type: Full-time

Expected start date: June 1st, 2025

About the Project:

The [Pervasive Computing for Health and Healthy Aging Lab](#) and [Baune](#) are seeking a highly motivated Postdoctoral Researcher to join our team in developing a Human Digital Twin (HDT) for space exploration. The HDT will provide real-time insights into an astronaut's health status, anticipating health risks and recommending preventive measures before they escalate.

Job Description:

The successful candidate will develop a digital twin of the circulatory system using artificial intelligence (AI), machine learning techniques and knowledge graphs. The postdoc will be responsible for:

- Build and fine-tune a learning model to predict cardiovascular risk factors and diseases, evaluating various influences
- Deploy the model into devices with limited computational resources for inference and data processing
- Design experiments to evaluate and validate the proposed model
- Collaborate with the project team to integrate the digital twin model with existing technologies, in particular, knowledge graphs.
- Supervise an undergraduate or Master of Engineering intern
- Analyze and interpret results from the digital twin model
- Present research findings at conferences and workshops
- Publish research results in top-tier journals and conferences

Requirements:

- PhD in Computer Science, Artificial Intelligence, Machine Learning, or a related field
- Experience in developing and applying AI and machine learning techniques to real-world problems
- Experience with self-supervised learning, sequential models, or human activity recognition models
- Familiarity with wearable and environmental sensor data analysis
- Excellent programming skills in languages such as Python, Java, or C++
- Strong communication and collaboration skills
- Ability to work independently and as part of a team

Desirable Qualifications:

- Experience in developing digital twins or similar models
- Familiarity with space-related research and applications
- Experience with limited computational resources and data processing constraints
- Knowledge of medical databases and healthcare applications

What We Offer:

- Competitive scholarship
- A dynamic and supportive research environment
- Opportunities for professional development and growth
- Collaboration with a team of experienced researchers and engineers

How to Apply:

Please submit your application via email to paula.lago at concordia.ca with the subject “[HDT-Postdoc] YOUR NAME ”, including:

- A cover letter outlining your motivation, research experience, interests, and goals after completing Postdoc
- A CV or resume
- Contact information for at least two academic or professional references

Applications will be evaluated on a first come, first served basis and will be received until a successful candidate is found. We look forward to hearing from you!