SCHOOL OF
COMPUTER SCIENCE

MSc & PhD positions: AI+Health research in the AI Lab

Start Date: January 2025

Department / Academic Unit: School of Computer Science, College of Engineering and Physical Sciences

We invite MSc and PhD students to join the AI Lab at the School of Computer Science to pursue groundbreaking research in Artificial Intelligence and Machine Learning within the realm of health innovation. The AI Lab focuses on advancing health informatics, predictive analytics, and personalized healthcare solutions through collaborations with academic institutions, industry partners, and healthcare providers. Our mission is to develop AI-driven innovations that improve patient outcomes and healthcare delivery, with research spanning the following areas:

1. **AI + Chronic Disease Management:**
   Develop AI solutions to analyze datasets, identify patterns, classify abnormalities, and predict disease progression for chronic illnesses such as heart disease, chronic respiratory conditions, and diabetes, enabling personalized treatment plans.
2. **AI + Aging Population and Elder Care:**
   Create AI models that predict and address healthcare needs for the elderly, focusing on fall detection, imminent fracture risk assessment, and real-time health monitoring through smart clothing and wearable devices.
3. **AI + Healthcare Accessibility and Resource Allocation:**
   Build AI-enhanced telemedicine solutions for remote diagnosis and treatment. This includes AI-powered diagnostic tools for skin conditions, range of motion assessments, remote rehabilitation, and natural language processing (NLP) tools to support physicians during consultations, improving healthcare access for underserved populations.

Candidate Requirements:
The ideal candidate will have experience building machine learning models using Python-based frameworks such as PyTorch or TensorFlow, and familiarity with working on GPU-enabled clusters and containerization technologies like Docker. Successful applicants will join a collaborative and dynamic research team consisting of post-doctoral scholars, PhD, MSc, and undergraduate students.

How to Apply:
Please submit the following materials as a single PDF attachment via email to Dr. Ed Sykes at sykes@uoguelph.ca :
- A cover letter that briefly summarizes your qualifications and interest in the position.
- A curriculum vitae, including the names and contact information for two professional references.
- A research statement (maximum two pages) outlining how your research interests align with Artificial Intelligence/Machine Learning and Health.

We encourage you to explore more about our research and team by visiting the AI Lab website: https://ailab.uoguelph.ca.