Jan 26, 2022 **Positions: MSc and PhD in Engineering**

Funded Graduate Student Positions Investigating Pressure-Based Gait Biometrics

Dr. Erik Scheme, Director of the Health Technologies Lab and Associate Director of the Institute of Biomedical Engineering, is inviting applications for graduate research positions (MSc and PhD)

Project description: The successful applicants will work as part of a team on a federally and provincially funded industry-partnered research project with Stepscan Technologies, a medical technology company that has developed the world's first and only modular pressure-sensitive flooring system, and CyberNB, a government-mandated, not-for-profit agency focused on growing the cybersecurity ecosystem. The project aims to develop a novel state-of-the-art pressure-based gait biometric system for improved user access control. For more details about the project, see here: http://blogs.unb.ca/newsroom/2021/08/biometric-security.php

As part of the team, you will (1) plan and conduct controlled experiments to illustrate and address confounding factors related to a variety of covariates (e.g. multi-user, footwear, speed, path, loading, and behavior); (2) collect real-world longitudinal data at the brand new, high security Cyber Centre; (3) develop a pressure-based gait recognition system by leveraging the state-of-the-art in hand-crafted gait features, dimensionality reduction and classification algorithms, and emerging deep learning approaches (e.g. spatiotemporal models, transfer learning, etc.), and (4) disseminate your findings through journal and conference publications, and knowledge transfer with the projects partners. The primary location of the research will be at UNB Fredericton within the Health Technologies Lab and the Institute of Biomedical Engineering, under the supervision of Drs. Erik Scheme and Angkoon Phinyomark.

Qualifications: A BSc or MSc in Engineering, Computer Science, or equivalent, with strong analytical skills and proficiency using Python, Matlab, or similar machine learning/statistical tools. The successful candidates should have demonstrated experience and a track-record of research and publication in machine learning and/or gait analysis.

Funding & Start Date: Positions is available immediately. Funding and start date will be determined upon acceptance.

Application: Please contact Dr. Erik Scheme (escheme@unb.ca) with a PDF package that includes: 1) a 1-page letter of interest describing your qualifications and highlighting all relevant skills and experiences; 2) a current CV including a list of publications; and 3) contact information for 3 references who can speak to your academic performance and research and collaborative abilities.

Review of applications will begin immediately and will continue until the positions are filled.

The University of New Brunswick is committed to employment equity and fostering diversity within our community and developing an inclusive workplace that reflects the richness of the broader community that we serve. We welcome and encourage applications from all qualified individuals including women, visible minorities, Indigenous persons, persons with disabilities, persons of any sexual orientation, gender identity or gender expression. Preference will be given to Canadian citizens and permanent residents of Canada.