**Research Assistant Position Available (towards a Master’s degree):**

**The Position:**
Dr. Hossein Rouhani of the Department of Mechanical Engineering at the University of Alberta invite applications and queries for a research assistant position in the area of the development of wearable technologies with the application of machine learning for monitoring the risk of secondary complication of wheelchair users. This position will be open to a candidate who possesses a Bachelor’s of Science (or Engineering) degree in Mechanical Eng, Biomedical Eng, Electrical Eng, or Computer Eng. Applicants with keen interests and/or experience (coursework, research, and/or industrial) in signal processing, programming, control systems, mechatronics, instrumentation, and/or artificial intelligence are highly encouraged to apply. The successful candidate will be required to work independently and must communicate well in English. All candidates will be financially supported during the tenure of their program. This position is available to Canadian citizens, permanent residents of Canada, and international students. It is expected that the successful candidate will take up the position preferably in May 2019, and be registered as a student at the University of Alberta.

**The Proposed Project:**
About 86,000 Canadians live with spinal cord injury with around 3,400 new cases every year. Many of these individuals are at the risk of secondary complications due to extended use of wheelchair. It has been shown that the body posture on the wheelchair is associated with a number of these secondary complications. The body posture/motion has been traditionally measured using camera-based motion-capture systems, which are limited to the confined space of a laboratory. Wearable sensors are an ideal solution for in-field assessment of human motion since they are inexpensive to produce, and user-friendly for long-term use. **The objective of this project** is to develop a novel wheelchair-embedded, wearable technology for body posture/motion monitoring to apply machine learning to predict the risk of secondary complications. The technical and clinical capacity of the developed technology will be experimentally evaluated in collaboration with the Faculty of Medicine and Dentistry and Glenrose Rehabilitation Hospital. This project has potential create new business opportunities and collaborative industry endeavors.

**Training Opportunities:**
The selected candidate will receive training in the following areas: i) biomedical instrumentation design, ii) biomedical signal processing, iii) machine learning, iv) physiological experimentation, and v) neuromusculoskeletal biomechanics. The student will have opportunities to present research outcomes in conferences.

**Application Procedure:**
Interested candidates may contact Dr. Hossein Rouhani (hrouhani@ualberta.ca) to discuss their qualifications and the project. Please visit [www.ncbl.ualberta.ca](http://www.ncbl.ualberta.ca) to learn more about the Dr. Rouhani’s field of research.