

Postdoctoral Fellowship

A multidisciplinary post-doctoral fellowship (PDF) position is available to start in early 2022 for one-year at the KITE, Toronto Rehabilitation Institute (TRI), University Health Network (UHN), which is Canada's largest research rehabilitation hospital.

The overall goal of the project is to develop a highly personalized care approach through the development of an artificial intelligence driven virtual cardiac rehabilitation system to automatically detect patient engagement, assess exercise technique (resistance training) and predict risk of dropout using the audio/video analysis of patient-clinician interactions. In order to train models to detect patient engagement, two types of data labeling strategies will be performed (i) self reports by the patients using a standardized user engagement scale, and (ii) video annotation. There exist few non-standardized annotation tools to label engagement from videos. The majority of the video annotation tools exist in the online learning setting, and no such tool exists in the realm of virtual rehabilitation. The main role of the PDF is to develop a statistically valid video (and/or audio) annotation scale or adapt an already existing annotation scale(s) to the cardiac rehabilitation population. This scale will be the foundation to train the artificial intelligence models to detect patient engagement.

The PDF will be jointly co-supervised by Dr. Shehroz Khan, Scientist, KITE and Dr. Tracey Colella, Clinician Scientist, TRI Rumsey Cardiac Center. The PDF will jointly work on this project with a research team comprising other PDFs, graduate students and research staff. This unique role will involve extensive literature review from multiple disciplines, including computer science, education / behavioral / clinical psychology, social and health science. The PDF will lead the execution of study and data collection, develop the engagement annotation scale and validate the artificial intelligence models for engagement detection. The PDF will publish in high impact journals and present at conferences to advance in the field. The PDF will also facilitate development of research ethics protocols, collaboration with interdisciplinary and patient partners, take a leadership role in writing competitive grants, supporting related projects and mentoring trainees within the research team. The annual salary for this position is \$55,000 plus benefits.

The ideal candidate for this position will have:

- A PhD in Computer Science / Cognitive Science, with background in statistics, educational psychology, student / people engagement, and online / distant learning.
- Strong publication record in high quality multidisciplinary journals/conferences, including computer vision, speech analysis, deep learning and social sciences/psychology.
- Prior experience working within a clinical or healthcare setting will be an asset.
- Excellent verbal and written communication skills.
- Excellent organizational skills and demonstrated strong leadership skills.

To apply, please send your CV (including any publications), brief research statement, any other relevant information in a single .pdf file to shehroz.khan@uhn.ca with the subject line "PDF - AIRR". Only selected candidates will be contacted for interview.

UHN has a diverse workforce and is an equal opportunity employer. UHN is a respectful, caring, and inclusive workplace. We are committed to championing accessibility, diversity and equal opportunity.