



## Institute of Biomedical Engineering UNIVERSITY OF TORONTO

### **MASc position at Biomedical Engineering Department, University of Toronto, Canada.**

We are seeking to hire a highly talented and motivated MASc candidate at the Institute of Biomedical Engineering (BME), University of Toronto, Canada [1]. The candidate will be based at the Artificial Intelligence and Rehab Robotics lab at the KITE - Toronto Rehabilitation Institute (TRI) [2], University Health Network, which is Canada's largest rehabilitation research hospital.

In this AGEWELL funded project, STICS (<http://sticsproject.com/>), we are collecting real-time indoor location data from people living with dementia in a care unit based at TRI using a wearable device from an industry partner. We will use this data to develop various clinical indices representing patients' physical movement, social engagement, other behaviours in the care unit. This project offers many research opportunities in terms of signal processing, machine learning, statistical analysis and working with a clinical population of people with dementia.

The candidate will work in a multi-disciplinary research team comprising of computer scientist, geriatric psychiatrist, biomedical engineer, geographical information engineer and research staff. The candidate is expected to have strong research and programming skills to develop pipelines for data processing and novel deep learning architectures. The candidate will have the opportunity to work with clinicians and facilitate data collection from real patients. They will be responsible for some data annotation, learning about ethics protocols and are expected to publish scientific results in top journals and present at relevant conferences in the field.

The ideal candidate should:

- Have obtained (or near completion of) a bachelor's degree in Computer Science / Electrical / Computer / Biomedical Engineering or related area.
- Have demonstrated knowledge in Signal Processing, Deep Learning, Graphical Convolution Neural Networks, Social Network Data Analysis.
- Prior experience in analyzing real time location data will be a plus.
- Have excellent academic standing, any publication or scientific writing experience will be given high consideration.
- Be well versed in programming languages, including Python, visualization/GIS tools (ArcPy, Geopandas), and other deep learning libraries, such as Pytorch.
- Possess excellent communication skills and demonstrate strong leadership skills.

This position is expected to start in May 2022 (at the latest by September 2022) and will be supervised by Dr. Shehroz Khan, Scientist at KITE, TRI and Assistant Professor, BME, U. of Toronto. Please verify your eligibility, admission, and funding details at BME's MASc program page [3] before applying for this position. This position is open to everyone; however, due to restricted funding situation this position only pays funds sufficient for Canadian citizen / permanent residents.

To apply, please send your resume (including any publications), copies of university transcripts, certificates, github, or any other relevant information in a single .pdf file to [shehroz.khan@utoronto.ca](mailto:shehroz.khan@utoronto.ca) with the subject line "**MASc - AIRR**". Only the selected candidates will be contacted for interview.



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Dr. Shehroz Khan  
Scientist,  
Artificial Intelligence and Rehab Robotics Lab,  
KITE | Toronto Rehab | University Health Network

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Institute of Biomedical Engineering,  
University of Toronto  
<http://individual.utoronto.ca/shehroz/>

[1] - <http://bme.utoronto.ca/>

[2] - <http://kite-uhn.ca/>

[3] - <https://bme.utoronto.ca/prospective-student/master-of-applied-science>