

Our multi-disciplinary dementia neuroimaging research group is seeking a **Junior Image Processing Software Developer**, for a one-year full-time contract position (with possibility for renewal) at the *LC Campbell Cognitive Neurology Research Unit* under the supervision of [Dr. Sandra Black](#) and [Dr. Maged Goubran](#). Our [neuroimaging lab](#) specializes in the application and development of cutting-edge multi-modal brain image analysis techniques to study stroke, dementia, and neurodegenerative disease. The successful candidate will be responsible for assisting with the development of multi-modal neuroimaging analysis software. There will also be opportunities to develop machine learning and image analysis algorithms using large multi-site imaging studies and trials (with hundreds or thousands of subjects each), including the Ontario Neurodegenerative Disease Research Initiative (ONDRI), Canadian Consortium on Neurodegeneration in Aging (CCNA), Canadian Alliance for Healthy Hearts and Minds (CAHHM), Toronto Dementia Research Alliance (TDRA), Brain-Eye Amyloid Memory Study (BEAM), and Medical Imaging Trials Network of Canada-C6 (MITNEC-C6). This will be performed in collaboration with our internal and external international collaborators including neurologists, radiologists, surgeons, psychologists, physicists, and computer scientists. There will also be opportunities for contributing to publications and conference presentations focused on novel computational tools for neuroscience research.

## Responsibilities

- Design data analysis workflows incorporating existing tools and refinements
- Assist with the development of brain image segmentation, registration, and morphometry software for day-to-day image processing
- Contribute to research projects and publishing papers
- Evaluate alternative approaches to image processing tasks to ensure robust performance across diverse neuroimaging datasets
- Facilitate the process of software building, testing, packaging, and distribution
- Create and maintain documentation for developers and end-users

## Requirements

- Post-secondary degree in computer science, engineering, or medical biophysics
- One or more years of work experience in software development
- A passion for computer programming, with strong skills in Python and C++
- Sound knowledge of object-oriented design and programming
- Intermediate knowledge of Linux and scripting
- Demonstrated ability to learn quickly

## Assets

- Experience with machine and deep learning preferred (sklearn, Pytorch, Tensorflow, Keras, etc.)
- Python software packaging, virtual environments, Anaconda/Conda, Jupyter/IPython
- Advanced knowledge of Linux, including scripting and system administration
- Working knowledge of FSL, FreeSurfer, SPM, MATLAB, R, ITK
- Experience with version control systems (Git) and software testing
- Knowledge of the software development lifecycle
- Test-driven development

The position is with the Sunnybrook site of the *Heart and Stroke Foundation Canadian Partnership for Stroke Recovery*, the *LC Campbell Cognitive Neurology Research Unit* and the *Sandra Black Centre for Brain Resilience and Recovery*, under Dr. Sandra Black, Director. This dynamic and collegial research environment provides opportunities to participate in pioneering imaging analysis techniques that will be used to understand and treat neurovascular and neurodegenerative disease.

Applications are encouraged from qualified women and men, members of visible minorities, aboriginal peoples and persons with disabilities. In accordance with Canadian immigration requirements, this advertisement is directed initially to Canadian citizens and permanent residents. We thank you in advance for your interest. Only those candidates selected for an interview will be contacted. No phone calls please. Application screening will continue until a suitable candidate is identified.

Sunnybrook Research Institute is committed to providing accessible employment practices that are in compliance with the Accessibility for Ontarians with Disabilities Act (AODA). If you require accommodation for disability during any stage of the recruitment process, please indicate this in your cover letter.

Sunnybrook Research Institute is strongly committed to inclusion and diversity within its community and welcomes all applicants including but not limited to: visible minorities, all religions and ethnicities, persons with disabilities, LGBTQ persons, and all others who may contribute to the further diversification of ideas.

## Application

To apply for this position, please:

- a) Complete the following online questionnaire: <https://goo.gl/1WvevD>
- b) Send a cover letter and Curriculum Vitae and the names of three potential references to:

Mr. Christopher Scott  
Brain Imaging Analysis Lab Manager  
L.C. Campbell Cognitive Neurology Research Unit  
Sunnybrook Health Sciences Centre  
2075 Bayview Avenue, room A421  
Toronto, ON, M4N 3M5  
[christopher.scott@sri.utoronto.ca](mailto:christopher.scott@sri.utoronto.ca)

## Links

- Sunnybrook Research Institute: [www.sunnybrook.ca/research](http://www.sunnybrook.ca/research)
- University of Toronto: [www.utoronto.ca](http://www.utoronto.ca)
- Heart and Stroke Foundation Canadian Partnership for Stroke Recovery: [www.canadianstroke.ca](http://www.canadianstroke.ca)  
[www.sunnybrook.ca/research/?page=csrhome](http://www.sunnybrook.ca/research/?page=csrhome)
- LC Campbell Cognitive Neurology Research Unit: [www.sunnybrook.ca/research/?page=cognitiveneurologyhome](http://www.sunnybrook.ca/research/?page=cognitiveneurologyhome)  
[imaging.brainlab.ca](http://imaging.brainlab.ca)
- Dr. Goubran's Medical Biophysics profile: <https://medbio.utoronto.ca/faculty/goubran>