



**UNIVERSITY OF
CALGARY**



Graduate and Post-doctoral Opportunities in Brain Computer Interface (BCI)

Summary:

We are looking for motivated individuals to join the Pediatric Brain Computer Interface (BCI) program at the Alberta Children's Hospital & the University of Calgary. We are currently recruiting MSc, PhD, and Post-doctoral Fellow positions to expand our diverse team focused on adapting, developing and implementing BCIs for disabled children. The BCI program is embedded within a multi-disciplinary team of neuroscientists, engineers, computer scientists, therapists, and clinicians at the Alberta Children's Hospital. **Funded positions are available for qualified candidates.**

The Program:

The aim of the BCI Program is to provide opportunities for children with severe neurological disability to access leading-edge, non-invasive brain-computer interface technology to achieve greater independence and quality of life. We are building a child- and family-centered clinical program that connects emerging BCI technologies with affected patients, placing patients as primary stakeholders that guide and inform the technological process. As we grow our clinical program, we also strive to drive forward our understanding of how BCI technology can best be adapted for complex pediatric populations.

The Candidate:

We are looking for passionate, motivated, aspiring scientists to help us build the technical side of the program. Backgrounds may be diverse including Electrical or Biomedical Engineering, Computer Science, Applied Mathematics, or other related areas. We particularly encourage applications from individuals with research or technical experience in neuroscience, machine learning, software development, signal processing, and/or robotics or electronic circuit design who are seeking to apply their skills to solve important clinical problems. Individuals should be interested in working with children, including those with complex physical disabilities, in a clinical environment.

The Skills:

We invite you to apply if you have experience in, or are interested in learning/building on any of the following skills:

- Programming in languages such as Python, Matlab, C++/C#
- Implementing and applying machine learning techniques
- Recording and analyzing EEG, EMG, and other bio-signals
- Digital signal processing
- Designing electronics/simple electric circuits
- Rapid prototyping of neuro-technologies
- Assisting with the operations of a clinical program

- Working within a multi-disciplinary team in both clinical and research settings

The Responsibilities:

As a trainee in the BCI team, your responsibilities would be adapted to your interests, specific projects, background, and level of training, but might include:

- Owning, developing, and executing your own personal research projects.
- Helping develop and adapt cutting-edge BCI tools and applications.
- Assisting with day-to-day operations of the BCI program.
- Contributing to publications, attending conferences, and supporting other research activities.
- Collaborating with other members of the BCI team and broader networks from the University of Calgary to national and international levels.
- Teaching and mentoring of more junior trainees and team members with different backgrounds.
- Thinking openly and creatively, proposing new ideas, and driving innovation.

The Benefits:

With the BCI Team, you will be part of the broader Calgary Pediatric Stroke Program family, where we offer additional opportunities to:

- Develop close relationships and learn from a multi-disciplinary team of neuroscientists, neuroimagers, clinicians, neurologists, therapists, rehab scientists, engineers and more.
- Directly integrate with the Alberta Children's Hospital (where our labs and facilities are located), allowing you to build connections and relationships directly with the populations we serve.
- Be a part of one of the only pediatric-focused BCI labs in the world and advance the front edge of a promising and impactful field.
- Strong research training support from established programs and institutes including the Hotchkiss Brain Institute (HBI), Alberta Children's Hospital Research Institute (ACHRI), multiple programs within the Faculty of Graduate studies.
- Compete for the most prestigious training awards – our program has earned 3 Vanier Canada Scholarships, multiple CIHR Banting and Best and Post-doctoral CIHR fellowships, and others.
- Affiliate and help grow a pan-Canadian network focused on pediatric BCI technology, where you will have access to support from a wide range of researchers, clinicians, and trainees across North America with years of expertise in the field of BCI research and development.

Contact Inquires:

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