Mohaddeseh Mozaffari
✉ *mohaddeseh.mozaffarii@gmail.com*
🌐 *mohimozaffari.github.io*

Professor Marco Bonizzato   October 9, 2025
sciNeurotech Lab
Polytechnique Montréal
2500, chemin de Polytechnique
Montréal (Québec), H3T 1J4
`marco.bonizzato@polymtl.ca`

Dear professor Bonizzato,

I am writing to express my strong interest in the PhD position in Invasive Brain-Computer Interface in Parkinson's disease clinical trial, as advertised on the Polytechnique Montréal website. My background in statistical physics and complex systems, combined with my growing experience in medical image analysis and machine learning, makes me really excited about the opportunity to contribute to your team's research.

I'm currently working on my master's research at Shahid Beheshti University under the guidance of Professor G. Reza Jafari. My project, Topological Analysis of Brain Networks in Autism Spectrum Disorder and Control Groups, has allowed me to explore how complex computational methods can be used to analyze brain networks. I've specifically been working with Vietoris-Rips persistent homology to study brain networks, and I've also explored using persistent images for machine learning classification. These projects have deepened my interest in applying computational techniques to real-world medical challenges.

Alongside my master's research, I'm also involved in a project focused on segmenting coronary arteries using X-ray angiography. This has been a great opportunity to apply AI and machine learning methods to medical data, and I'm eager to continue developing these skills as part of your team.

The research you're doing on invasive brain-computer interfaces for Parkinson's disease really caught my attention. Being able to contribute to a clinical trial that could make a real difference in people's lives is incredibly motivating. I'm confident that my analytical skills, combined with my programming experience in Python, C++, and Git, will allow me to make a positive impact. I also believe in the power of collaboration and open-source work, which is why I share my code on GitHub. Additionally, teaching Python has helped me improve my ability to explain complex topics clearly and connect with others.

On a personal level, finding out that I have ADHD has really changed my perspective on life and research. It's made me realize even more how important medical research is, and I'm incredibly motivated to work in this field to help others. I want to use my skills to contribute to research that has real-world, life-changing effects, and I can't think of a better place to do that than in your team.

In addition to the exceptional academic opportunities, I am particularly drawn to the Toronto-Montréal collaboration, as it offers a valuable opportunity to experience Canadian culture firsthand. I am also eager to enhance my French language skills through the courses offered by Polytechnique Montréal.

Thank you for considering my application. I'm really excited about the possibility of joining your team and contributing to the PhD project.

Sincerely,

Mohaddeseh Mozaffari