Mohaddeseh Mozaffari

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Prof. Amadou Barry
INRS
`amadou.barry@inrs.ca`
November 5, 2024

Dear Prof. Barry,

I am writing to express my interest in the doctoral project titled "Creation of an Algorithm to Analyze Brain Imaging and Genomic Data in Individuals with Autism" listed on the INRS website. With a robust background in Statistical Physics and Complex Systems, coupled with hands-on experience in data analysis and computational physics, I am excited about the opportunity to contribute to your research team.

Currently, I am pursuing my Master of Science at Shahid Beheshti University, focusing on fMRI data analysis using Topological Data Analysis (TDA). This project, under the supervision of Prof. G. Reza Jafari, involves studying brain connectivity patterns and analyzing cerebral activity differences between individuals with Autism Spectrum Disorder (ASD) and neurotypical cohorts. My role includes applying TDA techniques, utilizing age-stratified methods, and examining neurodevelopmental trajectories across various age groups. Alongside this, I am part of a team at Shahid Rajaei Heart Hospital working on the automatic classification and segmentation of coronary artery diseases using X-ray angiography. This ongoing project has enhanced my skills in medical data analysis, DICOM file processing, and developing custom augmentation techniques, while fostering a collaborative research environment.

My experience extends beyond data science into artificial intelligence, particularly in developing machine learning models for classification and segmentation tasks. I have a strong foundation in Python, C++, and Git, and I am adept at using tools that facilitate collaborative research. Additionally, I have been teaching Python, focusing on object-oriented programming, machine learning, and AI, which has enhanced my ability to explain complex ideas clearly and effectively. Working under your guidance at INRS would provide an invaluable opportunity to contribute to innovative research in neuroimaging and genomics. I am eager to leverage my skills to support advancements in understanding autism, which aligns perfectly with my academic interests and passion for research.

Thank you for considering my application. I look forward to the opportunity to discuss how my background, skills, and enthusiasm can contribute to your team in further detail.

Sincerely,
Mohaddeseh Mozaffari