Ariel Mundo Ortiz

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Dear Hiring Committee,

I am writing to express my interest in the Data Scientist position recently advertised at the Research Institute of the McGill University Health Centre (RI-MUHC). I am excited by the opportunity to contribute to projects with broad clinical impact that can help improve patient-centered care.

I have 3 years of experience working with large-scale health care data. In particular, I have worked with electronic health records during my training at CRCHUM, using data from the data lake of CHUM. I have developed pipelines to clean data of laboratory tests and vital signs, which has included using multiple data sources that need to be harmonized, and I have performed statistical analyses and visualization to support clinical studies. I have emphasized reproducibility in my analyses, ensuring that results can be reproduced by collaborators and other lab members. My postdoctoral training has allowed me to further refine my ability to interpret complex data and to validate machine learning models based on hospital data to different types of bias. I have also helped eliminate bottlenecks in the developed pipelines by successfully implementing code for parallel computing in an HPC environment.

On the other hand, I have ample experience working with multidisciplinary teams -including clinicians, external collaborators, statisticians, students and staff-. I have coordinated workflows to achieve timely milestones in different projects during my scientific training. I have also ample experience in scientific writing, as I have published multiple first-author publications (including publications in *Statistics in Medicine*, *Vaccine* and *Neoplasia*) and collaborated in other publications as co-author. I gained valuable experience in grant writing during my doctoral training, where I received funding for my doctoral studies (a Fulbright scholarship) and research (an Arkansas Biosciences Grant), and for a grant at the Canadian Institutes of Health Research during my first postdoctoral training (as co-investigator).

I am motivated by the mission of the RI-MUCH to leverage observational data to tackle important clinical questions and improve patient care. And I believe my technical and interpersonal skills fit nicely with RI-MUHC's and Dr. Buckeridge's lab research goals. I am a person that is always motivated to learn and to continually improve and I welcome the opportunity to further develop my analytical and technical skills in the advertised role.

Thank you for your time and consideration. I would be delighted to further discuss my training and experience, and how I believe they align with the required skills of the Data Scientist role.

Sincerely,

Ariel Mundo Ortiz

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Professional Experience

Centre de recherche du CHUM (CRCHUM) Montréal, QC

Postdoctoral Fellow January 2024- Present

- Working in projects of personalized medicine using big health data (electronic health records).
- In charge of developing data pipelines (including computing in a HPC environment), analyses using machine learning (regression models), data visualization, manuscript writing and revision.

Université de Montréal Montréal, QC

Postdoctoral Fellow, Département de médecine sociale et préventive et au centre de recherche en santé publique July 2022- December 2023

- Worked in projects of infectious disease modelling (mpox, COVID-19).
- Edited, revised and wrote academic manuscripts.
- In charge of developing pipelines for data cleaning and analysis.
- First year of postdoctoral fellowship was supported by a CRM-MfPH fellowship.

University of Arkansas Fayetteville, AR

Graduate Research Assistant Aug 2017- May 2022

- Designed and executed experiments in small animal models of cancer.
- Wrote and obtained grants to support studies and research costs.
- Developed code pipelines to analyze longitudinal data.
- Prepared manuscripts and prepared presentations to present research progress.

Universidad Rafael Landivar Guatemala

Teaching Assistant Professor 2016-2017

- Developed lectures for college Chemistry courses.
- In charge of laboratory supervision and student mentoring.

Adjunct Professor 2013-2017

- Taught Chemistry in two departments (Engineering, Health Sciences).
- Developed lectures, supervised laboratory experiments.
- In charge of student mentoring and collaborating with faculty members.

Lacteos Balcanicos Glad Guatemala

Assistant Plant Engineer 2012

- In charge of the production of different dairy products of the company.
- Supervised personnel and controlled material inventory material inventory.
- Was in charge of production scheduling, and quality control reporting.

Education

University of Arkansas, PhD. Biomedical Engineering May 2022

Universidad Rafael Landivar, B.S. Chemical Engineering (*cum laude*) 2009

Technical Skills

- Technical/Scientific writing
- Project management
- R
- Git
- Slurm

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- Statistics

Awards and Recognition

Fields Institute: Mathematics for Public Health Festival (MfPHFest)   October 2022

Received funding to attend the MfPHFest conference and present postdoctoral work done in the field of Statistics. (CAD 1,500)

Centre de recherches mathématiques (CRM) MfPH-CRM Postdoctoral Fellowship   July 2022

Received postdoctoral fellowship for one year to analyze public health and behavioral data (CAD 50,000)

BME Rising Scholar   June 2022

Selected by the committee of the BME Scholars Program at Washington University in St. Louis to receive mentorship about pathways and professional success in academic careers. Award included paid travel, conference attendance and honorarium.

Professional Awareness, Advancement, and Development (PADD) Scholar   2020-2021

Received funding and participated in the PAAD program to supplement my graduate education in persuasive speaking, commercialization, and data science (USD 1,500).

OMNI Endowed International Scholarship   2020

Granted as a scholar fulfilling the mission of the OMNI Center in Fayetteville (USD 500)

Fulbright Faculty Development Scholarship   2017-2019

Scholarship covered all costs of PhD studies for the first two years. Only two scholarships awarded for that period in the whole country. (USD 78,000)

Grants

Canada Institutes of Health Research (CIHR)   2023

Co-investigator in the grant "epidemiological modelling of behavioural impact on mpox mitigation strategies" lead by Prof. Nasri from Université de Montréal. Involved in the writing of the grant proposal, performing literature review, communicating with team members, and revising the final grant draft. Funding secured: CAD 412,000. The proposal was in the 50% rank within the competition. Record of the grant can be found in the CIHR funding decision database.

Arkansas Biosciences Institute 2021 seed grant competition   2021

Main author on a proposal co-submitted with Dr. Timothy Muldoon to examine gene expression and optically derived markers in a mouse model of colorectal cancer. Funding secured: USD 30,000. The proposal scored in the top 2 of all the individual research projects for the cycle.

Scientific Writing

A list of publications can be found in my Google Scholar profile (Link).

Languages

- Spanish: Native speaker
- English: Full professional competency
- French: Full professional competency