

Connor Braun

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OVERVIEW OF QUALIFICATIONS

Adaptive student of mathematics and neuroscience with three years of experience analyzing and modeling experimental data using Python. Consistently recognized for academic achievement. Enthusiastic, tenacious and independent learner, passionate about the creative application of mathematical insight.

Programming: Undergraduate research projects demonstrate familiarity with Python, R and Bash techniques including multiprocessing, cluster computing, data serialization and machine learning.

Statistics: Excellent academic performance in three statistics classes, with a fourth to be completed before Fall 2022. Completed a neuroscience honours thesis developing a statistical algorithm to quantify patterns in experimental data.

Teamwork: Effective leadership, communication and collaboration skills developed over the course of research, a rapid prototyping competition and former career as an emergency medical services practitioner and supervisor.

Versatility: Highly capable of independently learning complex topics and skills. Nearly all programming knowledge was self-taught. Prerequisite mathematical theory underlying research was learned outside of coursework.

EDUCATION

Bachelor of Science, Mathematics | Bachelor of Science, Neuroscience (Honours) **2018-Present**
University of Calgary

- Cumulative GPA: 4.00/4.00
- Over \$46,000 awarded over twelve scholarships and competitive bursaries

Related Courses

- Introduction to Probability - Calculus based approach to probability theory and applications. Univariate and multivariate continuous and discrete random variables and functions thereof. Expectation, variance and covariance.
- Research Methods and Data Analysis in Psychology II - Conducting and interpreting inferential statistical techniques including the t-test, Wilcoxon signed-rank test, one-way, factorial and mixed analysis of variance.
- Introduction to Theoretical Statistics (Completed August, 2022) - Foundations and properties of inferential statistics. Hypothesis testing, multi-parameter estimation, linear regression, chi-square test and goodness of fit test.

Emergency Medical Technician **2015**
Alberta Health and Safety Training Institute

RELATED EXPERIENCE

Undergraduate Researcher **May, 2021-Present**
Nicola Computational Neuroscience Lab

- Designed a Python pipeline to simulate thousands of neuronal time series in parallel and then used the output to validate the accuracy of a novel statistical algorithm quantifying their dynamics.
- Communicated original research findings at an in-person neuroscience symposium and was awarded first place for the depth and clarity of the presentation.
- Wrote and defended an honours thesis to a panel of three career neuroscientists who deemed the work worthy of the highest possible letter grade.

- Currently mining data and developing machine learning tools for the rapid classification of experimental time series, which will yield valuable functional insight into particular types of neural activity.

Innovator
NeuroNexus Competition

October, 2019-December, 2019

- Coordinated a team of undergraduate students in collaboration with industry experts in machine learning during the planning, development and marketing of a neural network designed to predict seizures in a clinical setting.
- Implemented and trained a recurrent neural network utilizing a novel memory cell without any prior experience or training in machine learning.

ADDITIONAL EXPERIENCE

Primary Care Paramedic, Emergency Medical Services Supervisor
Caroline District & Volunteer Ambulance

October, 2016-August 2018

- Logged over 5000 hours of active duty responding to emergencies and inter-facility transfers.
- Rendered exemplary emergency medical care to the fullest extent of the Primary Care Paramedic scope of practice, and was featured at an Alberta Health Services EMS symposium for professionalism and excellent communication.
- Was promoted to the role of supervisor in September, 2017, tasked with training new practitioners, overseeing integration of new technologies and ensuring effective use of crew resource management protocol.

Adult Care Worker
Calgary Drop-In and Rehab Centre

January, 2014-October, 2016

- Provided harm reduction and emergency shelter services to Calgary's homeless population at the largest shelter in North America, working with a team to provide beds for over 1000 people every night.
- Promoted the well-being and safety of clientele by offering compassion, access to clinical and employment resources, basic necessities of daily living and by nonviolent resolution of interpersonal conflicts.

INTERESTS

- **Science Communication:** Creation of effective, eye-catching graphics and animations to convey complex ideas to colleagues and laypeople alike. Currently designing a personal website and blog to host graphical user interfaces demonstrating research ideas and results.
- **Outdoors:** Summiting mountains, exploring trails and backpacking out for an overnight stay in the beautiful Canadian Rockies.
- **Learning:** Acquisition and creative application of knowledge across disciplines, specifically mathematics, medicine, neuroscience and graphical design.