Barrett Q. Buhler

Barrett.Quinn.Buhler@gmail.com| *github.com/barrettb* | *linkedin.com/in/Barrett-Buhler*|

EDUCATION

University of Toronto — Toronto, ON
M.Sc. Biostatistics — 2024-2025

University of North Carolina at Chapel Hill — Chapel Hill, NC
B.Sc. Statistics and Operational Research — 2020 - 2024

SKILLS

Programming Languages: Python, MySQL, R, Java
Tools & Libraries: Matplotlib, Pandas, PyTorch, Numpy, Scikit-learn, NetworkX, Scipy, Tensorflow, Seaborn, Plotly
Modeling Techniques: Machine Learning, Data Visualization, Regression Analysis, Financial Modelling, Deep Learning, Generative AI

EXPERIENCE

Hospital for Sick Children | Strug Lab — Toronto, ON
Statistical Genetics Lab studying Sub-Genotypes of Rolandic Epilepsy — August 24- Present
Researcher

- Working under Lisa Strug and Delnaz Roshandel to identify sub-genotypes of Rolandic Epilepsy utilizing R, Regenie, and KING

University of Toronto | Department of Statistical Sciences — Toronto, ON
STA302H1F – Methods of Data Analysis I – An Introduction to Regression Analysis — August 24- Present
Teaching Assistant

- Provided in-classroom assistance and support to 300 students in explaining statistical concepts and facilitating lectures related to mathematical proofs for linear regression and in-class coding assignments
- Conducted weekly office hours providing personalized support to 10+ students weekly, addressing specific questions and clarifying complex statistical concepts

National Science Foundation (NSF)
Networks: Foundations in Probability, Optimization, and Data Science Group — Chapel Hill, NC
Researcher — Sep 2023 – Dec 2023

- Delivered report to the Sports Analytics Group at UNC and assisted in the development of network-based methodologies for enhancing analysis within the nationally ranked UNC men's basketball team (Paper at https://bit.ly/3uC8PbM)
- Awarded $2500 USD for the development of network-based methodologies related to machine learning
- Engineered a K-Nearest Neighbors (KNN) Model integrated in graph space to effectively classify play-by-play soccer data accurately discerning outcomes into wins, losses, or ties
- Conducted analysis of network data using Python's NetworkX library and other tools advised by Dr. Nicolas Fraiman continuously exploring network structures for valuable insights through self-directed study

Division of Cardiology- UNC School of Medicine
Working under the guidance of Dr. Faisal Syed to apply deep learning techniques to cardiology — Chapel Hill, NC
AI Researcher — June 2023 – May 2024

- Implemented a Python-based Convolutional Neural Network using TensorFlow to predict cardiac age from 20,000+ EKG records with an MSE of 7 allowing the division of cardiology to enhance heart abnormality predictions
- Created artificial ECG data through a generative adversarial network to improve the cardiac age model in underrepresented age groups with Python and TensorFlow *(Repository can be found on GitHub)*

AMP Lab - UNC School of Medicine
Computational data analytics and programming team focused on analyzing pediatric EEG data — Chapel Hill, NC
Data Science Research Assistant — August 2022 – May 2023

- Developed data collection and cleaning protocol for AMP Lab neurofeedback study to collect EEG data from 13 patients
- Created neurofeedback ML time-series anomaly detection model with over a dozen patients to predict the efficacy of SSRI drugs on children using Python, Numpy, Scipy, and FOOOF

UNC Impact Investing Club — Chapel Hill, NC
Student organization creating UNC's first student-led climate-themed investment fund — August 2020 – May 2024
Fund Co-Founder and Co-Director

- Established the Climate Resilience Fund, UNC's first student-led impact investment fund and helped incorporate the fund within the Kenan-Flagler Business School
- Recruited thirty members to work as members of the investment team and increased the club's membership to 300 members to become the largest sustainability club on campus
- Co-authored an 11-page investment proposal outlining the investment thesis and risks to form an advisory board of eight professionals to oversee investment processes

RESEARCH & PROJECTS

U.S. Public Equity ESG Fund Composite and Parnassus Core Equity Fund: Performance and Factor Attribution

- Comparative analysis of U.S. public equity ESG funds to the S&P 500(*Paper at bit.ly/3Wnw6Wy)*
- Published in Discussions: Case Western Undergraduate Research Journal, Berkeley Economic Review, and IPE
- Presented at Eastern Economics Association and accepted into International Trade and Economics Conferences

OTHER & INTERESTS

Interests: Surfing, Travelling, Learning Languages, Chess, Premier League
Work Authorization: US and Canadian Citizen