J. BLAKE BULLWINKEL

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EDUCATION

Harvard University, Cambridge, MA — June 2022
M.S. in Data Science. GPA 3.95/4.0.

Williams College, Williamstown, MA — June 2020
B.A. in Mathematics, Chinese. GPA 3.83/4.0 (*cum laude*)

University of Oxford, Oxford, UK — June 2019
Attended as a visiting student as part of the selective, year-long Williams-Exeter Program at Oxford.

PROFESSIONAL EXPERIENCE

Microsoft, Redmond, WA — Starting August 2022
Data Scientist
• Joining as a Data Scientist in the Cloud and AI group.

Harvard University, Cambridge, MA — Spring 2022
Teaching Fellow
• Selected to assist professors in teaching of CS 109b: Advanced Topics in Data Science, a course focused on non-linear statistical methods and deep learning models, including CNNs, RNNs, LSTMs, autoencoders, and GANs.

PepsiCo R&D, Valhalla, NY — Summer 2021
Data Science & Analytics Intern
• Developed Python package for anomaly detection of water usage time series using statistical and ML methods.
• Trained time series models (ARIMA, LSTM, FB Prophet) to forecast future water efficiency of 17 beverage plants.
• Developed an automated data pipeline with actionable insights in Power BI that has been adopted nationwide.

Marble — Summer 2020–Present
Co-Founder
• Leading the development of a mobile app that provides carbon footprint estimates for 150,000+ grocery products.
• Team of five accepted into the 2021 Harvard i-lab Venture Program for three consecutive semesters (website).

SELECTED PROJECTS

Harvard IQSS-Microsoft Collaboration on Differential Privacy — Sept 2021–June 2022
• Worked with Microsoft data scientists to research the fairness impact of differentially private data synthesis.
• Developed pre-processing method to mitigate bias of synthesizers in SmartNoise Python library.

GANs for Ordinary and Partial Differential Equations — Feb 2021–June 2022
• Researched and developed methods to improve the training stability of DEQGAN, a generative adversarial network for solving differential equations, and developed novel transfer learning algorithms (master's thesis).

DreamDiff Python Package — Dec 2020
• Led a team of three to develop a Python package that implements forward-mode automatic differentiation (PyPI).
• Added extensions for root-finding, optimization by gradient descent, quadratic splines, and visualization methods.

HONORS AND AWARDS

IACS Student Scholarship to support data science thesis research ($20,000 award) — 2021
Goldberg Prize in Mathematics for the best mathematics colloquium (department-wide senior prize) — 2020
Linen Prize in Chinese for achieving distinction in Chinese (department-wide senior prize) — 2020
Carolyn Korthals Altes Scholarship for academics and potential to contribute to society — 2019
UWCSEA Class of '16 Graduation Student Speaker elected by peers to deliver student address — 2016

SKILLS AND INTERESTS

Programming	Python (NumPy, pandas, sklearn, statsmodels, TensorFlow, PyTorch), R, SQL, HTML/CSS
Methods	Statistical machine learning, time-series analysis, stochastic methods, deep learning
Language	Working proficiency in written and spoken Chinese (Mandarin)
Interests	Rowing, photography, writing (Medium blog), Rubik's cube solving (WCA profile)