

# J. BLAKE BULLWINKEL

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## EDUCATION

<b>Harvard University</b> , Cambridge, MA M.S. in Data Science. GPA 3.93/4.0.	Expected June 2022
<b>Williams College</b> , Williamstown, MA B.A. in Mathematics, Chinese. GPA 3.83/4.0 ( <i>cum laude</i> )	June 2020
<b>University of Oxford</b> , Oxford, UK Attended as a visiting student as part of the selective, year-long Williams-Exeter Program at Oxford.	June 2019

## PROFESSIONAL EXPERIENCE

<b>Microsoft</b> , <i>Data Scientist</i> • Data Scientist in the Cloud and AI group.	Starting August 2022
<b>PepsiCo R&amp;D</b> , <i>Data Science &amp; Analytics Intern</i> • Developed Python package for anomaly detection of water usage time series using statistical and ML methods. • Trained time series models (ARIMA, Facebook Prophet, LSTM) to forecast water efficiency of future weeks, lowering the mean validation RMSE across 17 beverage plants by 43% in comparison to a moving average baseline. • Developed an automated data pipeline with actionable insights in Power BI that has been adopted nationwide.	Summer 2021
<b>Marble</b> , <i>Co-Founder</i> • Leading the development of a mobile app that provides carbon footprint estimates for 200,000+ grocery products. • Team of three accepted into the 2021 Harvard i-lab Venture Program for three consecutive semesters ( <a href="#">website</a> ).	Summer 2020–Present
<b>Zola Electric</b> , <i>Digital Platforms Intern</i> • Queried time series data using MySQL to identify transaction delays in solar electricity startup's software platform.	Summer 2019

## SELECTED PROJECTS

<b>Harvard IQSS-Microsoft Collaboration on Differential Privacy</b> • Working with Microsoft data scientists to research the fairness impact of differentially private data synthesis. • Developed pre-processing method to mitigate bias of synthesizers in <a href="#">SmartNoise</a> Python library.	Sept 2021–Present
<b>GANs for Ordinary and Partial Differential Equations</b> • Researching and developing methods to improve the training stability of <a href="#">DEQGAN</a> , a novel generative adversarial network for solving differential equations, and extending results to partial and stochastic equations (master's thesis).	Feb 2021–Present
<b>DreamDiff Python Package</b> • Led a team of three to develop a Python package that implements forward-mode automatic differentiation ( <a href="#">PyPI</a> ). • Added extensions for root-finding, optimization by gradient descent, quadratic splines, and visualization methods.	Dec 2020

## LEADERSHIP EXPERIENCE

<b>Exeter College Boat Club</b> , Oxford, UK, <i>Rowing Captain</i> • Elected to lead the Exeter College Boat Club as the men's rowing captain during year abroad at Oxford.	Spring 2019
<b>Williams College</b> , Williamstown, MA, <i>Chinese Teaching Assistant</i> • Selected by Chinese department to act as a salaried assistant to professors through 1:1 tutoring sessions.	2017–2020

## HONORS AND AWARDS

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

## SKILLS AND INTERESTS

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