

Blake Bullwinkel

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EDUCATION

Harvard University M.S. in Data Science. GPA 3.95/4.0.	Cambridge, MA <i>May 2022</i>
Williams College B.A. in Mathematics, Chinese. GPA 3.83/4.0 (<i>cum laude</i>).	Williamstown, MA <i>June 2020</i>
University of Oxford Attended as part of the selective, year-long Williams-Exeter Program at Oxford (WEPO).	Oxford, UK <i>June 2019</i>

PROFESSIONAL EXPERIENCE

Microsoft <i>Data Scientist</i> • Building ML models and pipelines to optimize host OS updates in Azure (Cloud + AI Group).	Redmond, WA <i>Aug 2022–Present</i>
Harvard University <i>Teaching Fellow</i> • 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.	Cambridge, MA <i>Feb–May 2022</i>
PepsiCo R&D <i>Data Science & Analytics Intern</i> • 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.	Valhalla, NY <i>May–Aug 2021</i>
Marble <i>Co-Founder</i> • Leading the development of a mobile app that provides carbon footprint estimates for 150,000+ grocery products. • Team of six accepted into the 2021 Harvard i-lab Venture Program for three consecutive semesters.	Remote <i>June 2020–Present</i>

SELECTED PROJECTS

Transfer Learning with Physics-Informed Neural Networks • Developed a multi-head architecture and transfer learning procedure for efficient simulation of branched flows. • Paper accepted to the Machine Learning and the Physical Sciences workshop at NeurIPS 2022 (arXiv).	<i>Sept 2021–May 2022</i>
Generative Adversarial Network Methods for Solving Differential Equations • 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 (GitHub). • Paper accepted to the AI for Science workshop at ICML 2022 (arXiv).	<i>Feb 2021–May 2022</i>
Harvard IQSS-Microsoft Collaboration on Differential Privacy • Worked with Microsoft data scientists to research the fairness impact of differentially private synthetic data in ML. • Paper accepted to the Theory and Practice of Differential Privacy (TPDP) workshop at ICML 2022 (arXiv).	<i>Sept 2021–May 2022</i>

HONORS AND AWARDS

Certificate of Distinction in Teaching for CS109b based on student ratings (mean 4.67/5.0)	<i>2022</i>
IACS Student Scholarship to support data science thesis research (\$20,000 award)	<i>2021</i>
Goldberg Prize in Mathematics for the best mathematics colloquium (department-wide senior prize)	<i>2020</i>
Linen Prize in Chinese for achieving distinction in Chinese (department-wide senior prize)	<i>2020</i>
Carolyn Korthals Altes Scholarship for academics and potential to contribute to society	<i>2019</i>

SKILLS AND INTERESTS

Programming	Python (NumPy, pandas, sklearn, TensorFlow, PyTorch), R, SQL, HTML/CSS
Tools/Platforms	Conda, Jupyter, Git, Docker, Kubernetes, Azure, AWS
Language	Working proficiency in written and spoken Chinese (Mandarin)
Interests	Rowing, photography, writing (Medium blog), Rubik's cube solving (WCA profile)