Ben Barrett

[redacted] United States • +1 [redacted] • ben.neuber.barrett@gmail.com

Education

University of Oxford 2019 - 2020
MSc in Statistics, *with Distinction*; advised by Tom Rainforth
My dissertation was awarded high distinction (84/100), accepted at two NeurIPS 2021 workshops (1, 2), and published at AISTATS 2022 (arXiv). It developed the first theoretical robustness bounds for a popular kind of generative model. Selected coursework: Statistical Learning Theory, {Computational, Bayesian} Statistics

Harvard College 2015 - 2019
BA in Applied Mathematics and Computer Science, Secondary in Statistics, *3.8/4.0 GPA*
Selected coursework (* = graduate level): Machine Learning*, Natural Language Processing*, Data Structures & Algorithms, Theoretical Computer Science, Advanced {Micro, Macro}economics, Real Analysis, Abstract Algebra

Experience

Stanford Institute for Economic Policy Research, Stanford University 2022 -
Predoctoral Research Fellow, working with Claudia Allende and Shoshana Vasserman
- Implemented GMM/instrumental variable models (e.g. 1, 2) from scratch in Julia; built data pipelines and graph prediction model (using PyG, PyTorch) to impute missing network data; designed and calibrated price menus for ongoing congestion pricing experiment with 10,000 drivers.
- Fitted structural models of supply and demand; estimated treatment effects using differences-in-differences.
- Introduced CI and pre-commit tooling to projects; ran workshop on programming best practices.
- Completed 2/3 of the first-year PhD courses in Microeconomics; taking the Industrial Organization PhD sequence in the upcoming academic year; applying for PhDs in Economics starting Fall 2024.

QuantCo Inc. 2020 - 2022
Data Scientist
- Helped develop risk models used to annually price >€1 billion in car insurance premia, building spatial analysis tooling & numerically safe routines for estimation; performed major refactorings of complex codebase.
- In team of 2, designed & implemented performant library (using Numba) for simulating customer lifetime value; achieved order-of-magnitude speed-ups (seconds to milliseconds), enabling real-time customized pricing.
- Actively contributed to internal libraries for data engineering, modelling and visualization (>15 merged PRs).
- Conducted ∼50 technical data science interviews; managed and mentored a data science intern.
- Became proficient in the data science stack and fluent in software/data engineering workflows.

School of Engineering and Applied Sciences, Harvard University 2018 - 2019
Teaching Fellow for CS 181: Machine Learning
- Wrote lesson plans and taught weekly class of upper-level undergraduates; developed and graded course-wide (100+ students) theory and programming assignments; assisted students in office hours.
- Rated 5.0/5.0 in anonymous student evaluations (10 responses); sample comments: "*Brilliant at ML and brilliant at teaching it*"; "*Always available, always prepared*"; "*Knows how to make complicated concepts clear and simple*"; "*Incredibly enthusiastic, genuinely cared*"; "*One of the best TFs I've had at Harvard*".

Selected Honors

German National Merit Scholarship (awarded to top ∼0.25% of German undergraduates)	2016 - 2020
Bok Center Certificate of Distinction in Teaching (for rating above 4.5/5 in student teaching evaluations)	2019
Harvard Program for Research in Science and Engineering Fellowship (to support undergraduate research)	2018
Detur Prize (GPA in top 100 in year group, across departments)	2017
John Harvard Scholarship (GPA in top 5% of year group, across departments)	2016

Skills and Service

Programming Languages & Tools Weekly use: Python (e.g., NumPy, Pandas, scikit-learn, PyTorch, Dask, NetworkX), R (e.g., tidyverse), Julia, MATLAB, Git, *nix, Conda; Historical use: C++, SQL

Spoken Languages English (native); German (fluent); French (conversational); Spanish (basic)

Reviewing AISTATS {2022, 2023} **Advising** Peer Advising Fellow, Harvard College, 2018 - 2019

Last updated: 09/10/2023