Ben Barrett

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Education

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

Harvard College — 2015 - 2019, Cambridge, USA
BA in Applied Mathematics (Focus Field: 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 -, Stanford, USA
Predoctoral Research Fellow; advised by Claudia Allende and Shoshana Vasserman
- Contributed to economic research projects at different maturity levels: from ideation, data munging, and experiment design to reduced form estimation, structural modeling, and paper editing.
- Implemented generalized method of moments/instrumental variable estimators (Torgovitsky (2016), Chetverikov & Wilhelm (2017)) from scratch to determine causal road congestion relationships.
- Fitted large-scale structural models of supply and demand (e.g. Berry, Levinsohn and Pakes (1995)) to characterize equilibrium effects in education markets; estimated treatment effects via diff-in-diffs.
- Imputed graph labels and simulated assignment mechanisms for counterfactual analyses.
- Completed 2/3 first-year PhD Microeconomics courses; currently in PhD Industrial Organization sequence.

QuantCo Inc. — 2020 - 2022, Berlin, Germany
Data Scientist
- Helped develop risk models used to price >€1 billion in car insurance premia annually; built 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, modeling 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, Cambridge, USA
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 the 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 (undergraduate research funding)	2018
Harvard College Research Program Fellowship (undergraduate research funding)	2017
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 Proficient in Julia, Python, R, git; knowledge of C++, MATLAB, 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: 12/22/2023