Isaac Backer

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Education

University of Oxford — Oxford, United Kingdom
Master of Science (MSc) in Social Data Science — *2025 - 2026*

- Thesis: **Currently being marked as an anonymous submission.**
- Coursework in applied statistics, machine learning, data science, and research design.

University of New South Wales (UNSW) — Sydney, Australia
Bachelor of Economics (Honours) — *2024 - 2025*

- Received First Class Honours. **WAM:** 89.13.
- Thesis: *As I Say, Not As I Do: Exploring Partisan Explanations for the Divergence Between Economic Sentiment and Reality in the United States*, supervised by Professor Richard Holden (See Projects).
- PhD level coursework in econometrics, causal inference, microeconomics, macroeconomics, and health economics.

University of New South Wales (UNSW) — Sydney, Australia
Bachelor of Politics, Philosophy and Economics (Economics Major) — *2021 - 2023*

- Degree awarded with Distinction. **WAM**: 81.42.
- Awarded Dean's List for Academic Excellence in 2021, 2022 and 2023.
- Coursework in econometrics, empirical methods, applied ethics, political economy, and international relations.

Cranbrook School — Sydney, Australia
HSC — *2019 - 2020*

- Received Award for Academic Excellence and Scholars Award. Distinguished achiever on NSW Honour Roll.

Experience

Predoctoral Research Fellow — July 2025 – Present
Manos Institute for Cognitive Economics — *Sydney, Australia / Oxford, United Kingdom (remote)*

- Led weekly presentations to team of economics professors on mathematical topics in database theory, including dependency theory, conjunctive queries, expressive power, and finite model theory.
- Conducted detailed literature reviews covering papers in the neuroeconomics literature.
- Worked extensively on the mathematics of database theory, and applying these insights to theoretical models of cognitive reasoning / deduction for a working paper.

Economics Research Assistant — Jan 25 – Present
University of New South Wales — *Sydney, Australia*

- Research Assistant to economics Professor Richard Holden
- Worked to develop a real-time end-to-end Australian economic sentiment index from Google Trends search data, including data scraping, and time-series construction in R, Python, and Stata.
- Forked and modified an open-source R package to adapt its scraping behaviour to the project's sampling needs.

English Tutor — 2021 - 2023
Tutor Doctor Eastern Suburbs — *Sydney, Australia*

- Worked as private in-home academic tutor for high school students with Tutor Doctor Eastern Suburbs.
- Privately managed weekly client bookings and communication. Wrote weekly session reports on student progress to provide relevant feedback to clients

Ward Assistant — 2021 - 2024
NSW Health (Royal Prince Alfred Hospital - SLHD) — *Sydney, Australia*

- Part of casual roster at Royal Prince Alfred Hospital in Camperdown, Sydney. Worked in COVID-19 Clinic, Emergency Department and ICU.

Projects

MSc Thesis 2025 – 2026 (in progress)

- Currently being marked as an anoymous submission

Economics Honours Thesis – "Vibecession" Replication and Reanalysis 2024

- Replicated the most prominent academic explanation for the U.S. "vibecession" (the persistent gap between economic sentiment and economic fundamentals) using a conceptually identical procedure and found that the headline result failed to replicate.
- Developed an alternative partisan-asymmetry explanation and showed it accounted for a larger share of the sentiment–reality gap than any competing explanation in the literature at the time of writing.
- Constructed a novel Google Trends–based real-time sentiment index which mechanically ruled out salient forms of partisan signalling

Applied ML project - Replication and extension of "Colors of Growth" 2026

- Replicated an economic history paper that used HSV colour histograms from European oil paintings to construct high-frequency historical indices of economic growth.
- Implemented PCA-based feature extraction and replicated core methodology from written description in original paper
- Extended the original paper's approach using features from a pre-trained neural network to test whether composition, texture, and style encode additional signal for economic growth beyond colour.

Technical Skills

Languages & Software: Python, Stata, R, LaTeX
Methods: Econometrics, causal inference, randomized controlled trials, survey methodology, time-series analysis, machine learning
Tools: Git/GitHub, Docker, VS Code, Claude Code, uv, JupyterLab, Overleaf