William Overman

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EDUCATION

STANFORD UNIVERSITY
PhD Graduate School of Business
Operations, Information, and Technology
2022 - Present | Stanford, CA

CALTECH
BS in Mathematics, Computer Science (double major)
2016 - 2020 | Pasadena, CA
GPA: 4.0 / 4.3

UC IRVINE
MS in Computer Science
2020 - 2022 | Virtual (Covid-19)

SKILLS

1 DOT ≥ 1000 LOC

Python	●●●●●
SQL	●●●●○
R	●●○○○
C++	●●○○○
OCaml	●●●○○
pandas & sklearn	●●●●●
PyTorch	●●●○○
TensorFlow	●●○○○

COURSEWORK

GRADUATE
Machine Learning for Sequence Modeling
Foundations of Supply Chain Management
Advanced Topics in Optimization
Reinforcement Learning
Convex Optimization
Probabilistic Learning
Learning in Graphical Models
Algorithmic Game Theory

UNDERGRADUATE
Introduction to Algorithms *(Teaching Asst 3x)*
Discrete Mathematics *(Teaching Asst 2x)*
Decidability and Tractability *(Teaching Asst 1x)*
Machine Learning & Data Mining
Probability and Algorithms

AWARDS

Morgan Ward Prize for best work on an open problem in mathematics by an underclassman at Caltech.
Dean's Award of $10,000 from UC Irvine for "outstanding research potential."

EXPERIENCE

UBER | Applied Scientist PhD Intern (Rider Science Team)
May 2024 - Present | San Francisco, CA

- Demonstrated the presence of statistically significant network interference in AB experiments run on the product ranking algorithm
- Wrote an implementation of a novel testing algorithm for interference that can be used for any AB test on Uber's platform
- Provided recommendations based on recent research on network interference in experiments to further detect and correct for biased estimates

UBER | Applied Scientist PhD Intern (Airports Team)
May 2023 - Aug 2023 | Sunnyvale, CA

- Led a **switchback experiment** at over 50 airports globally to evaluate the lift of changes to trip request-related parameters that were calculated via operational and technical insights.
- Obtained a statistically significant increase of about **0.1% absolute lift** in trip completion for select experiment groups.
- Spearheaded the use of **reinforcement learning** at airports to automate the tuning of the aforementioned parameters in place of direct calculations. Rolled out an initial version of this approach at select major airports. Participated significantly in meetings with engineers to discuss future versions.
- Worked heavily with Uber's experimentation platform, machine learning platform, and internal databases.

PUBLICATIONS

- **Aligning Model Properties via Conformal Risk Control** 2024
- **Occupancy Prediction with Patient Data: Evaluating Time-Series, Patient-Level Aggregation, and Deep Set Models** Working Paper, 2024
- **On Aligning Prediction Models with Clinical Experiential Learning: A Prostate Cancer Case Study** Working Paper, 2024
- **Beating Price of Anarchy and Gradient Descent without Regret in Potential Games** ICLR 2024
- **Online Resource Allocation in Episodic Markov Decision Processes** 2023
- **Global Convergence of Multi-Agent Policy Gradient** ICLR 2022
- **Independent Natural Policy Gradient always converges in Markov Potential Games** AISTATS 2022
- **Some Ordered Ramsey Numbers of Graphs on Four Vertices** Australasian Journal of Combinatorics

RESEARCH

VISITING RESEARCHER Sep 2020 - Sep 2022 | South Korea

- Worked as a visiting researcher at the Institute for Basic Science, specifically researching problems at the interface of learning and scheduling theory as well as multi-period resource allocation problems
- Along with a collaborator from Seoul National University, worked with a major hospital in South Korea on using machine learning to make short-term predictions of emergency department occupancy