

# WILLIAM OVERMAN

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## 💡 RESEARCH INTERESTS

AI Alignment AI Safety Reinforcement Learning Causal Inference Healthcare

## 🎓 EDUCATION

Stanford University	2022-2026 ( <i>exp.</i> )
Graduate School of Business	
Ph.D. Operations, Information and Technology	
University of California, Irvine	2020-2022
M.Sc., Computer Science	
California Institute of Technology (Caltech)	2016-2020
B.S., Mathematics & Computer Science (Double Major)	

## 👛 INDUSTRY AND RESEARCH POSITIONS

Uber	
PhD Scientist Intern, Airports & Uber Eats	2023- San Francisco, CA
Institute for Basic Science	
Visiting Researcher	2021, Daejeon, South Korea
Summer Undergraduate Research Fellowship	2019, Daejeon, South Korea
Oxford University	
Summer Undergraduate Research Fellowship	2018, Oxford, United Kingdom
Mathematical Institute	

## 📄 PUBLICATIONS

### [REFEREED CONFERENCE PAPERS]

- **Conformal Arbitrage: Risk-Controlled Balancing of Competing Objectives in Language Models**  
W. Overman, M. Bayati.  
NeurIPS 2025.
- **Improved Regret Bound for Safe Reinforcement Learning via Tighter Cost Pessimism and Reward Optimism**  
K. Yu, D. Lee, W. Overman, D. Lee.  
RLC 2025.
- **Aligning Model Properties via Conformal Risk Control**  
W. Overman, J. Vallon, M. Bayati.  
NeurIPS 2024.
- **Higher-Order Causal Message Passing for Experimentation with Complex Interference**  
M. Bayati, Y. Luo, W. Overman, S. Shirani, R. Xiong. (alphabetical).  
NeurIPS 2024.
- **Beating Price of Anarchy and Gradient Descent without Regret in Potential Games**  
I. Sakos, S. Leonardos, S. Stavroulakis, W. Overman, I. Panageas, G. Piliouras.  
ICLR 2024.

- **Global Convergence of Multi-Agent Policy Gradient in Markov Potential Games**

S. Leonardos, **W. Overman**, I. Panageas, G. Piliouras (**alphabetical, sole student**).  
**ICLR 2022.**

- **Independent Natural Policy Gradient always converges in Markov Potential Games**

R. Fox, S. McAleer, **W. Overman**, I. Panageas (**alphabetical, sole student**).  
**AISTATS 2022.**

**[SUBMITTED AND WORKING PAPERS]**

- **Can We Validate Counterfactual Estimations in the Presence of General Network Interference?**

S. Shirani, Y. Luo, **W. Overman**, R. Xiong, M. Bayati.

*Accepted for presentation at the MSOM Technology, Innovation, and Entrepreneurship SIG, 2025.*

- **Occupancy Prediction with Patient Data: Evaluating Time-Series, Patient-Level Aggregation, and Deep Set Models**

S.-H. Kim, **W. Overman**, J. Pauphilet, W. Cha. (**alphabetical, sole student**).

*Major Revision at Manufacturing & Service Operations Management (MSOM).*

- **On Aligning Prediction Models with Clinical Experiential Learning: A Prostate Cancer Case Study**

J. J. Vallon, **W. Overman**, W. Xu, N. Panjwani, X. Ling, S. Vij, H. P. Bagshaw, J. T. Leppert, S. Shah, G. Sonn, S. Srinivas, E. Pollom, M. K. Buyyounouski, M. Bayati.

arXiv.

**[JOURNAL PAPERS]**

- **Some Ordered Ramsey Numbers of Graphs on Four Vertices**

**W. Overman**, J. Alm, K. Coffey, C. Langhoff.

**Australasian Journal of Combinatorics (2024).**

☆ **AWARDS**

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**Dean's Award** of \$10,000 from UC Irvine for "outstanding research potential." 2020

**Morgan Ward Prize** from Caltech for best work on an open problem in mathematics by an underclassman. 2018

✍ **TEACHING**

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**TA, Operations** Stanford, Graduate School of Business, 2024 Fall

**TA, Optimization and Simulation Modeling** Stanford, Graduate School of Business, 2023 Fall

**TA, Introduction to Algorithms** University of California, Irvine 2022 Spring

**TA, Introduction to Cryptography** University of California, Irvine 2021 Fall

**TA, Introduction to Algorithms** California Institute of Technology 2020 Spring (Head TA), 2019 Spring, 2018 Spring

**TA, Decidability and Tractability** California Institute of Technology 2019 Fall

**TA, Discrete Mathematics** California Institute of Technology 2019 Winter, 2020 Winter