

# Hamsa Bastani

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Wharton School, University of Pennsylvania  
Operations, Information & Decisions (OID) Group  
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## Academic Positions

### **Wharton School, University of Pennsylvania**

Operations, Information & Decisions; Statistics and Data Science (secondary)

**Associate Professor** (*with tenure*), 2023 – present

**Assistant Professor**, 2018 – 2023

- *Steering Committee*, Penn Center for Health Incentives and Behavioral Economics
- *Senior Fellow*, Leonard Davis Institute for Health Economics
- *Affiliate*, Analytics at Wharton, Warren Center for Networks & Data Sciences, Penn Research in ML, Penn Center for AI-enabled systems, Wharton Climate Center

**Co-Director**, Wharton Healthcare Analytics Lab, 2023 – present

### **IBM Research**

Herman Goldstine Postdoctoral Fellow, 2017-2018

## Education

### **Stanford University**

Ph.D. in Electrical Engineering, 2012-2017

### **Harvard University**

A.M. in Physics, 2011-2012

A.B. *summa cum laude* in Physics and Mathematics, 2008-2012

## Journal Papers

### **Efficient and Targeted COVID-19 Border Testing via Reinforcement**

**Learning**, H. Bastani\*, K. Drakopoulos\*, V. Gupta\*, J. Vlachogiannis, C. Hadjicristodoulou, P. Lagiou, G. Magiorkinis, D. Paraskevis and S. Tsiodras  
*Nature, Research Article* (2021)

(\* equal first authorship)

- *1st Place*, Pierskalla Award for Best Paper in Healthcare (2021)
- *2nd Place*, Public Sector in Operations Best Paper Award (2021)

### **Interpretable OR for High-Stakes Decisions: Designing the Greek**

**COVID-19 Testing System**, H. Bastani\*, K. Drakopoulos\*, V. Gupta\*, J. Vlachogiannis, C. Hadjicristodoulou, P. Lagiou, G. Magiorkinis, D. Paraskevis and S. Tsiodras  
*INFORMS Journal on Applied Analytics* (2022)

(\* equal first authorship)

- *1st Place*, Wagner Prize for Excellence in Operations Research Practice (2021)

### **Adaptive Clinical Trial Designs with Surrogates: When Should We Bother?** A. Anderer, H. Bastani and J. Silberholz

*Management Science* (2022)

- *1st Place*, Pierskalla Award for Best Paper in Healthcare (2019)
- *1st Place*, MSOM Student Paper Competition (Anderer, 2020)

- *Finalist*, Public Sector in Operations Best Paper Award (2020)

**Meta Dynamic Pricing: Transfer Learning Across Experiments**

H. Bastani, D. Simchi-Levi and R. Zhu

*Management Science* (2022)

**Learning Personalized Product Recommendations with Customer**

**Disengagement**, H. Bastani, P. Harsha, G. Perakis and D. Singhvi

*M&SOM* (2022)

- *2nd Place*, Service Science Best Paper Award (2019)

- *Hon. Mention*, POMS Best Student Paper in Supply Chain (Singhvi, 2019)

**AI for Climate Change Adaptation**, S. Cheong, K. Sankaran and H. Bastani

*WIRES Data Mining and Knowledge Discovery, Perspectives* (2022)

**Predicting with Proxies: Transfer Learning in High Dimension**

H. Bastani

*Management Science* (2021)

**Mostly Exploration-Free Algorithms for Contextual Bandits**

H. Bastani, M. Bayati and K. Khosravi

*Management Science* (2021)

**Online Decision-Making with High-Dimensional Covariates**

H. Bastani and M. Bayati

*Operations Research* (2020)

- *1st Place*, Pierskalla Award for Best Paper in Healthcare (2016)

- *1st Place*, George Nicholson Student Paper Competition (2016)

- *1st Place*, MSOM Student Paper Competition (2016)

- *1st Place*, IBM Service Science Best Student Paper Award (2016)

**Evidence of Upcoding in Pay-for-Performance Programs**

H. Bastani, J. Goh and M. Bayati

*Management Science* (2019)

- *1st Place*, Health Applications Society Best Student Paper Award (2015)

**Multiplex coherent anti-Stokes Raman scattering (MCARS) for chemically sensitive, label-free flow cytometry**

C. Camp, S. Yegnanarayanan, A. Eftekhari, H. Sridhar and A. Adibi

*Optics Express* (2009)

Working  
Papers

**Improving Human Sequential Decision-Making with Reinforcement Learning**

H. Bastani, O. Bastani and W. Sinchaisri

*Minor Revision, Management Science*

- *1st Place*, Behavioral OM Best Working Paper Award (2021)

- *1st Place*, INFORMS Data Mining Best Paper Award (2022)

- *2nd Place*, TIMES Working Paper Award (2021)

- *2nd Place*, POMS Behavioral OM Junior Scholar Paper Award (Sinchaisri, 2021)

### **Multitask Learning and Bandits via Robust Statistics**

K. Xu and H. Bastani

*Minor Revision, Management Science*

- 3rd Place, IBM Service Science Best Student Paper Award (Xu, 2022)

### **Unmasking Human Trafficking Risk in Commercial Sex Supply Chains with Machine Learning**, P. Ramchandani, H. Bastani and E. Wyatt

*Minor Revision, M&SOM*

- 1st Place, MSOM Student Paper Competition (Ramchandani, 2022)

- 1st Place, Service Science Best Student Paper Award (Ramchandani, 2021)

- 2nd Place, POMS Sustainable OM Best Student Paper Award (Ramchandani, 2022)

- Finalist, Public Sector in Operations Best Paper Award (2021)

- People's Choice Award, Early-Career Sustainable OM Workshop (2022)

### **Group-Sparse Matrix Factorization for Transfer Learning of Word Embeddings**, K. Xu, X. Zhao, H. Bastani and O. Bastani

*Major Revision, Management Science*

- Preliminary version in ICML 2021

### **Generative AI Can Harm Educational Outcomes**

H. Bastani\*, O. Bastani\*, A. Sungu\*, H. Ge, O. Kabakcı and R. Mariman

(\* equal first authorship)

### **Optimizing Health Supply Chains in Sierra Leone with Decision-Aware Machine Learning**, T.-H. Chung, J. Abdulai, P. Bayoh, L. Sandi, F. Smart, H. Bastani\* and O. Bastani\*

(\* equal last authorship)

### **Rethinking Fairness for Human-AI Collaboration**

H. Ge, H. Bastani and O. Bastani

- Preliminary version in ITCS 2024

### **Optimal Heterogeneous Collaborative Linear Regression and Contextual Bandits**, X. Huang, K. Xu, D. Lee, H. Hassani, H. Bastani and E. Dobriban

*Reject & Resubmit, JASA*

### **Generative Adversarial Bayesian Optimization for Surrogate Objectives**

M. Yao, Y. Zeng, H. Bastani, J. Gardner, J. Gee and O. Bastani

### **Optimal Targeting with Unknown Network Interference and Heterogeneous Treatment Effects**, X. Wang, H. Bastani, O. Bastani and Z. Ren

### **Responsible Sourcing: The First Step is the Hardest**

P. Ramchandani, H. Bastani and K. Moon

- People's Choice Award, Early-Career Sustainable OM Workshop (2020)

### **Are Bans Effective under Limited Monitoring? Evidence from High Seas Management**, H. Bastani and J. F. de Zegher

- People's Choice Award, Early-Career Sustainable OM Workshop (2019)

Refereed  
Papers

**Stochastic Bandits with ReLU Neural Networks**

K. Xu, H. Bastani, S. Goel and O. Bastani  
ICML (2024)

**Rethinking Fairness for Human-AI Collaboration**

H. Ge, H. Bastani and O. Bastani  
ITCS (2024)

**Uniformly Conservative Exploration in Reinforcement Learning**

W. Xu, Y. Ma, K. Xu, H. Bastani and O. Bastani  
AISTATS (2023)

**Decision-Aware Learning for Optimizing Health Supply Chains**

T.-H. Chung, V. Rostami, H. Bastani and O. Bastani  
ML4Health (2022)

**Bandits for Online Calibration: An Application to Content Moderation on Social Media Platforms**, V. Avadhanula, O. Baki, H. Bastani, et al.

NeurIPS DMML & RL4RealLife Workshops (2022)

**Group-Sparse Matrix Factorization for Transfer Learning of Word Embeddings**, K. Xu, X. Zhao, H. Bastani and O. Bastani

ICML (2021)

**Exploring the Causal Relationships between Initial Opioid Prescriptions and Outcomes**, J. Zhang, V. Iyengar, D. Wei, B. Vinzamuri, H. Bastani,

A. Macalalad, A. Fischer, G. Yuen-Reed, A. Mojsilović, and K. Varshney  
AMIA Workshop on Data Mining for Medical Informatics (2017)

**Interpretability via Model Extraction**

O. Bastani, C. Kim and H. Bastani  
FATML Workshop on Fairness, Accountability, and Transparency (2017)  
- *Finalist*, Pierskalla Award for Best Paper in Healthcare (2018)

**Analysis of Medicare Pay-for-Performance Contracts**

H. Bastani, M. Bayati, M. Braverman, R. Gummadi and R. Johari  
EC Workshop on Mechanism Design for Social Good (2017)

**Creating Optical Vortex Modes with a Single Cylinder Lens**

H. Sridhar, M. Cohen and J. Noe  
Proceedings of *SPIE* (2010)

Book  
Chapters

**Optimizing Health Supply Chains in LMICs with Machine Learning: A Case Study in Sierra Leone**, H. Bastani, O. Bastani and T.-H. Chung

*Sustainable and Responsible Operations - The New Frontier* (Forthcoming)  
Springer Nature; edited by C. Tang

**Reinforcement Learning for Public Health: Targeted COVID-19 Screening**

H. Bastani, K. Drakopoulos and V. Gupta

*AI for Social Impact* (2022)

Online; edited by F. Fang, M. Tambe and B. Wilder

**Proceed with Care: Integrating Predictive Analytics with Patient Decision-Making**, H. Bastani and P. Shi

*AI for Healthcare: Interdisciplinary Partnerships for Analytics*

Cambridge University Press; edited by S. Suen, E. Enns and D. Scheinker

**Applied Machine Learning in Operations Management**

H. Bastani, D. J. Zhang and H. Zhang

*Innovative Technology at the Interface of Finance and Operations*

Springer Series; edited by V. Babich, J. Birge, G. Hilary

Students

**Tsai-Hsuan (Angel) Chung**, Wharton OID PhD

- Advisor

**Pia Ramchandani**, Wharton OID PhD

- Advisor

**Xiaomeng Wang**, Wharton Stats PhD

- Co-Advisor with Z. Ren

**Stefanos Poulidis**, INSEAD DS PhD

- Thesis committee member, co-author (advisors: G. Hall, S. Zoumpoulis)

**Arielle Anderer**, Wharton OID PhD, grad. in 2023

- Advisor

- *Initial Placement*: Assistant Professor at Cornell Johnson

**Kan Xu**, Penn Economics PhD, grad. in 2023

- Advisor

- *Initial Placement*: Assistant Professor at ASU Carey

**Wichinpong Sinchaisri**, Wharton OID PhD, grad. in 2021

- Thesis committee member, co-author (advisor: G. Allon)

- *Initial Placement*: Assistant Professor at UC Berkeley Haas

**Ruihao Zhu**, MIT IDSS PhD, grad. in 2021

- Thesis committee member, co-author (advisor: D. Simchi-Levi)

- *Initial Placement*: Assistant Professor at Purdue Krannert

**Divya Singhvi**, MIT ORC PhD, grad. in 2020

- Co-authored job market paper (advisor: G. Perakis)

- *Initial Placement*: Assistant Professor at NYU Stern

**Khashayar Khosravi**, Stanford EE PhD, grad. in 2019

- Co-authored job market paper (advisor: M. Bayati)

- *Initial Placement*: Postdoctoral fellow at Google

**Wanqiao Xu**, University of Michigan Math UG, grad. in 2021

- Advised undergraduate thesis

- *Initial Placement*: Stanford MS&E PhD

Teaching

**Wharton School, University of Pennsylvania**

OIDD 321: Introduction to Management Science (Undergrad), 2018 – present

- Recipient of Wharton Teaching Excellence Award in 2019, 2020 & 2021

OIDD 941: Advances in Data-Driven Decision-Making (Ph.D.), 2021 – present  
 - Designed new course on bandits, reinforcement learning and transfer learning

## Invited Talks

**2024:** Conference on Health, Inference, and Learning Keynote; MIT Initiative on Digital Economy; TTIC Workshop, U of Chicago

**2023:** Columbia IEOR/DRO; Georgetown OM; UCLA Anderson; Dartmouth Tuck; Wisconsin-Madison Business Analytics; Penn Optimization Seminar; George Mason Stats; SUNY Binghamton Math & Statistics; NC State ISE; IMSI, University of Chicago; IPAM, UCLA; Stanford OIT Sustainability Conf; Symposium on AI for Learning Health; Penn ASSET Seminar; Philly Ops Day; Economist/IBM AI Roundtable; Purdue Statistics & Optimization Workshop; Penn CHIBE-PAIR Roybal Retreat; APS Conf

**2022:** Duke Fuqua Decision Sciences; HBS TOM; MIT OR/Stats; Stanford MS&E; Berkeley-UCSF Computational Precision Health; Virtual Quant Marketing Seminar Series; USC Marshall DSO; Georgia Tech AI4OPT Seminar; University of Alberta Business Analytics; JHU Carey OM; MIT AI Health Policy Forum; Harvard CRCS AI for Social Impact Seminar; NYC Operations Day; CCC/INFORMS/ACM Artificial Intelligence/Operations Research Visioning Workshop; Bilkent University; LMU Munich AI Seminar; UMD Social Impact Analytics Workshop; Stanford Ocean Health & Sustainability; Singapore Mgmt University; WALE Workshop; Information & Learning Workshop; Northeastern OR & Social Justice Lab; UC Berkeley Simons Institute; Sustainable OM SIG; Future of Data-Centric AI; MIT CODE

**2021:** MIT ORC; Berkeley Haas IOTM; NUS IORA; UNC OM; LBS OM; INSEAD TOM; Wharton Statistics; CMU Tepper OM; SMU Cox ITOM; WPI CS Colloquium; University of Minnesota Carlson SCO; University of Alberta AI Seminar; Philadelphia INFORMS Chapter; Lyft Marketplace Labs; Keynote Speaker for KDD Workshop on RL/MAB; Information & Learning Workshop; Chicago Booth Summer Institute in Machine Learning in Economics; COVID-19 Panelist, SIAM Conf on Data Mining; Loyola University Chicago Health Informatics Series; Boston Digital Leadership Forum; Rutgers Post-Pandemic SC & Health Mgmt Conf

**2020:** Yale School of Management; Chicago Booth OM; U of Maryland DO&IT; Purdue Krannert; Cornell Johnson OTIM; Utah Ops Conference; Facebook Adaptive Experimentation Workshop; Simons Institute for the Theory of Computing; Keynote Speaker for KDD Workshop on Applied Data Science for Healthcare; Invited Speaker for NeurIPS Workshop on Consequential Decision-Making; INFORMS Health Applications Society Tutorial; Wharton Analytics Webinar

**2019:** NYU Stern OM; MIT IDSS Data Science Lab; UC Irvine Operations & Decision Technologies; UC Irvine Algorithms, Combinatorics & Optimization Center; UT Dallas Naveen Jindal OM; Wharton OID; Wharton Empirical Workshop; Information & Learning Workshop, IESE; ISOM Workshop, Emory; Healthcare SIG; CUHK Shenzhen Healthcare & Service Operations Workshop

**2018:** IMA Data-Driven Supply Chain Mgmt (Applied) Workshop; IMA Data-Driven Supply Chain Mgmt (Theory) Workshop; Penn Warren Center for Network & Data Sciences; IBM Research Math for AI; IDinsight; MIT ORC IAP Seminar on OR for Social Impact

**2017:** UCLA Anderson; Duke Fuqua; USC Marshall; Northwestern IEMS; Yale School of Management; Harvard Business School; Columbia IEOR / DRO; Ross School of Business; INSEAD; Chicago Booth OM; Kellogg OM; Purdue Krannert IS; MIT IDSS Data Science Lab; U of Cambridge, Judge Business School; IBM Research Applied Probability Seminar; Cornell Tech; Stanford-Berkeley Health Economics Workshop

**2016:** Cornell ORIE; Wharton OID; Indiana Kelley; London Business School; Pittsburgh Katz; MIT Sloan OM; Stanford GSB OIT; Stanford Biostatistics Workshop; Stanford Medical School Med-X Conference; Healthcare SIG

## Awards

*1st Place*, INFORMS Data Mining Best Paper Award, 2022  
*People's Choice Award*, Early-Career Sustainable OM Workshop, 2022  
*1st Place*, Wagner Prize for Excellence in Operations Research Practice, 2021  
*1st Place*, Pierskalla Award for Best Paper in Healthcare, 2021  
*2nd Place*, Public Sector in Operations Best Paper Award, 2021  
*1st Place*, Behavioral OM Best Working Paper Award, 2021  
*2nd Place*, TIMES Working Paper Award, 2021  
Wharton Teaching Excellence Award, 2021  
*Finalist*, Public Sector in Operations Best Paper Award, 2020  
*People's Choice Award*, Early-Career Sustainable OM Workshop, 2020  
Wharton Teaching Excellence Award, 2020  
*1st Place*, Pierskalla Award for Best Paper in Healthcare, 2019  
*2nd Place*, Service Science Best Paper Award, 2019  
*People's Choice Award*, Early-Career Sustainable OM Workshop, 2019  
Wharton Teaching Excellence Award, 2019  
*Finalist*, Pierskalla Award for Best Paper in Healthcare, 2018  
*1st Place*, Pierskalla Award for Best Paper in Healthcare, 2016  
*1st Place*, George Nicholson Student Paper Competition, 2016  
*1st Place*, MSOM Student Paper Competition, 2016  
*1st Place*, IBM Service Science Best Student Paper Award, 2016  
*1st Place*, Health Applications Society Best Student Paper Award, 2015  
National Science Foundation Fellow, 2012-2017  
Stanford Department Fellowship in Electrical Engineering, 2012-2013  
*Finalist*, Intel Science Talent Search, 2008

## Service

Associate Editor for *Operations Research* (2022-)  
Associate Editor for *M&SOM* (2021-)  
Associate Editor for *Operations Research Letters* (2022-)  
Senior Editor for *POMS* (2023-)  
Area Chair for *NeurIPS* (2021-2023)  
Guest Associate Editor (special issue) for *Naval Research Logistics* (2022)

Statistics Advisory Board, AHA Food is Medicine Initiative

Senior Program Committee, Algorithmic Learning Theory (ALT), 2023  
Co-Organizer, Analytics for Social Impact Workshop, 2023-2024  
Co-Organizer, Summer Operations Conference, 2023  
Program Committee, Early-Career Sustainable OM Workshop, 2023  
Co-Organizer, EAAMO Doctoral Consortium, 2022  
Co-Organizer, Early-Career Sustainable OM Workshop, 2022  
Wharton Faculty IT Steering Committee, 2022-2024  
Board Member, INFORMS Revenue Mgmt & Pricing Section, 2021-2023  
Area Chair, EAAMO Conference, 2021  
Program Committee, EC Workshop on Design of Online Platforms, 2021  
Co-Chair, George Nicholson Student Paper Competition, 2020  
Co-Chair, Pierskalla Award for Best Paper in Healthcare, 2020  
Program Committee, EC Conference, 2020  
Program Committee, AAAI Conference on Artificial Intelligence, 2020  
Program Committee, EC Mechanism Design for Social Good Workshop, 2018-2020  
Wharton Dean's Advisory Council, 2019-2020  
Area Chair, Mechanism Design for Social Good Workshop, 2019  
Meritorious Service Award for *Management Science*, 2018  
Co-Chair, Pierskalla Award for Best Paper in Healthcare, 2017

*Various years:* Speaker for Penn Women in Data Science Conf; Women in Simulation at Winter Simulation Conf; Women in OR/MS Panel at INFORMS; CMU YinzOR Student Conference

*Various years:* Judge for George Nicholson Student Paper Competition, MSOM SIG Best Paper Award, Revenue Management & Pricing Conference, PSOR Best Paper Award, RM&P Best Student Paper Award, Healthcare Applications Society Student Paper Competition, MSOM Student Paper Competition, MSOM Healthcare SIG, MSOM Sustainability SIG, MSOM Service SIG, MSOM Supply Chain SIG, POMS Best Healthcare OM Paper Competition, Elwood S. Buffa Doctoral Dissertation Award, Service Science Best Paper Award

External	<b>HiredScore</b>
Activities	Scientific Advisory Board, Oct 2022 – present

**Macro-Eyes**  
Technical Advisor, Mar 2022 – Mar 2023

**Meta Core Data Science**  
Contractor, Aug 2021 – Aug 2022