

# Hamsa Bastani

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

**Assistant Professor, Wharton School, University of Pennsylvania**

Operations, Information & Decisions (OID), 2018 – present

- *Affiliate*, Warren Center for Networks & Data Sciences
- *Affiliate*, Penn Research in Machine Learning
- *Affiliate*, Analytics at Wharton & Wharton AI for Business
- *Senior Fellow*, Leonard Davis Institute for Health Economics

**Herman Goldstine Postdoctoral Fellow, IBM Research**

Math for AI, 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* (2021)

(\* denotes equal contribution)

- *Finalist*, Pierskalla Award for Best Paper in Healthcare (2021)
- *Finalist*, Public Sector in Operations Best Paper Award (2021)

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

*Management Science* (Forthcoming)

- *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* (2021)

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

H. Bastani

*Management Science* (2021)

**Learning Personalized Product Recommendations with Customer Disengagement**, H. Bastani, P. Harsha, G. Perakis and D. Singhvi  
*MSOM* (Accepted)

- *2nd Place*, Service Science Best Paper Award (2019)
- *Hon. Mention*, POMS Best Student Paper in Supply Chain (Singhvi, 2019)

**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

**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  
(\* denotes equal contribution)

- *Finalist*, Wagner Prize for Excellence in Practice (2021)
- *Invited Paper (under review)*, INFORMS Journal on Applied Analytics

**Improving Human Decision-Making with Machine Learning**  
H. Bastani, O. Bastani and W. Sinchaisri  
- *2nd Place*, POMS Behavioral OM Junior Scholar Paper Award (Sinchaisri, 2021)  
- *Finalist*, Behavioral OM Best Working Paper Award (2021)  
- *Finalist*, TIMES Working Paper Award (2021)

**Unmasking Human Trafficking Risk in Commercial Sex Supply Chains with Machine Learning**, P. Ramchandani, H. Bastani and E. Wyatt  
- *Finalist*, Public Sector in Operations Best Paper Award (2021)  
- *Finalist*, Service Science Best Student Paper Award (Ramchandani, 2021)

**Group-Sparse Matrix Factorization for Transfer Learning of Word Embeddings**, K. Xu, X. Zhao, H. Bastani and O. Bastani  
- Preliminary version in ICML 2021

**Mind the Gap: Safely Bridging Offline and Online Reinforcement Learning**, W. Xu, K. Xu, H. Bastani and O. Bastani

**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)

**Learning Across Bandits in High Dimension via Robust Statistics**

K. Xu and H. Bastani

**Robust Generalization of Quadratic Neural Networks via Function Identification**, K. Xu, H. Bastani and O. Bastani

**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)

**Interpreting Predictive Models for Human-in-the-Loop Analytics**

H. Bastani, O. Bastani and C. Kim

- *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

Refereed  
Conference  
Papers

**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)

**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

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

*Modeling for Health: Making Changes* (editors: S. Suen, E. Enns, 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*

(editors: V. Babich, J. Birge, G. Hilary)

## Students

**Arielle Anderer**, Wharton OID PhD

- Advisor

**Pia Ramchandani**, Wharton OID PhD

- Advisor

**Kan Xu**, Penn Economics PhD

- Advisor

**Wichinpong Sinchaisri**, Wharton OID PhD (advisor: G. Allon), grad. in 2021

- Thesis committee member, co-author

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

**Ruihao Zhu**, MIT IDSS PhD (advisor: D. Simchi-Levi), grad. in 2021

- Thesis committee member, co-author

- *Initial Placement*: Assistant Professor at Purdue Krannert

**Divya Singhvi**, MIT ORC PhD (advisor: G. Perakis), grad. in 2020

- Co-authored job market paper

- *Initial Placement*: Assistant Professor at NYU Stern

**Khashayar Khosravi**, Stanford EE PhD (advisor: M. Bayati), grad. in 2019

- Co-authored job market paper

- *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 OID, University of Pennsylvania**

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

- Recipient of Wharton Teaching Excellence Award in 2019 and 2020

Instructor, Bandits, RL and Transfer Learning (OIDD 941), 2021

- Designed new Ph.D. course

## Invited Talks

**2022:** HBS TOM

**2021:** MIT ORC; NUS IORA; UNC OM; LBS OM; INSEAD TOM; Wharton Statistics; CMU Tepper OM; SMU Cox ITOM; WPI CS Colloquium; 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

**2015 & earlier:** Cornell ORIE; Cornell ORIE Young Scholars Workshop; Wharton Empirical Research in OM Workshop

## Awards

*Finalist*, Wagner Prize for Excellence in Practice, 2021

*Finalist*, Pierskalla Award for Best Paper in Healthcare, 2021

*Finalist*, Public Sector in Operations Best Paper Award, 2021

*Finalist*, Behavioral OM Best Working Paper Award, 2021

*Finalist*, TIMES Working Paper Award, 2021

Wharton Teaching Excellence Award, 2020

*Finalist*, Public Sector in Operations Best Paper Award, 2020

*People's Choice Award*, Early-Career Sustainable OM Workshop, 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 *M&SOM* (2021-)  
Reviewer for *Management Science*, *Operations Research*, *M&SOM*, *POM*, *JRSS Series B*, *Annals of Statistics*, *JASA*, *JMLR*, *Statistics in Medicine*, *NeurIPS*, *ICML*, *AISTATS* and *Nature*

Area Chair, NeurIPS Conference, 2021  
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  
Speaker, CMU YinzOR Student Conference, 2017

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

## External Consulting

**Facebook Core Data Science**  
Part-time contractor, August 2021 – present