

Phebe Vayanos

WiSE Gabilan Assistant Professor of Industrial & Systems Engineering and Computer Science
Associate Director, USC Center for AI in Society
Director, Data-Driven Decision-Making Research Group
University of Southern California

CONTACT INFORMATION	University of Southern California Viterbi School of Engineering Olin Hall of Engineering Office OHE310L	Mobile Phone: +1 (617) 901-4581 Mail: phebe.vayanos@usc.edu Web: https://sites.google.com/usc.edu/phebevayanos/
RESEARCH INTERESTS	Operations Research & Artificial Intelligence: Robust Optimization; Fairness, Efficiency, Transparency in Machine Learning and Resource Allocation; Data-Driven Optimization; Prescriptive Analytics; Decision-Making under Uncertainty; Causal Inference; Game Theory; Applications: Public Policy (housing and organ allocation), Public Health (suicide and substance use prevention), Biodiversity Conservation.	
ACADEMIC EMPLOYMENT	University of Southern California , Los Angeles, CA <i>Viterbi School of Engineering</i> WiSE Gabilan Assistant Professor of Industrial & Systems Engineering and Computer Science 2021–Today	
	University of Southern California , Los Angeles, CA <i>Viterbi School of Engineering</i> Assistant Professor of Industrial & Systems Engineering and Computer Science 2017–2021	
	University of Southern California , Los Angeles, CA <i>CAIS Center for Artificial Intelligence in Society</i> Associate Director 2016–Today	
	University of Southern California , Los Angeles, CA <i>Viterbi School of Engineering</i> Assistant Professor of Industrial & Systems Engineering 2015–2017	
	MIT Sloan School of Management , Cambridge, MA <i>Operations Research & Statistics Group</i> Lecturer in Operations Research and Statistics 2014–2015	
	MIT Sloan School of Management , Cambridge, MA <i>Operations Research Center</i> Postdoctoral Associate • Advisor: Dimitris Bertsimas 2013–2015	
	Massachusetts Institute of Technology , Cambridge, MA <i>Department of Chemical Engineering</i> Postdoctoral Associate • Advisor: Paul I. Barton 2012–2013	
EDUCATION	Imperial College London , London, UK <i>Department of Computing</i> Ph.D., Operations Research • Advisors: Daniel Kuhn and Berç Rustem 2008–2012	
	Imperial College London , London, UK <i>Department of Electrical and Electronic Engineering</i> M.Eng., Electrical and Electronic Engineering (with year in industry) • Advisor: Danilo Mandic 2002–2007	
PHD THESIS	“Decision rule approximations for dynamic optimization under uncertainty,” Imperial College, 2013.	

AWARDS AND
HONORS

- National Science Foundation CAREER award, 2021
- WiSE Gabilan Assistant Professorship (2021-2024, or until tenure) – distinction that serves to recognize academic excellence
- INFORMS Public Sector Operations Research (PSOR) Society, VP of Communications, 2021, 2022
- INFORMS Diversity, Equity, and Inclusion Ambassadors Program Award, 2020
- Zumberge Epidemic & Virus Related Research and Development award, 2020
- Best Paper Award at GameSec 2020 Conference for the paper “Exploiting Bounded Rationality in Risk-based Cyber Camouflage Games”
- Zumberge Faculty Research & Innovation award, 2018
- Elected Member of the Committee on Stochastic Programming (COSP), the governing body of the Stochastic Programming Society (SPS)
- Member of the INFORMS AdHoc AI Strategy Advisory Committee (appointed by the INFORMS President), 2019 (under President Ramayya Krishnan) and 2021 (under President-elect Radhika Kulkarni)
- Outstanding paper at CPAIOR 2018 for “Designing fair, efficient, and interpretable policies for prioritizing homeless youth for housing resources,” M. J. Azizi, P. Vayanos, B. Wilder, E. Rice and M. Tambe.

AWARDS AND
HONORS EARNED
BY MY STUDENTS

- Caroline Johnston: 1st place at the Bayer Women in OR Scholarship, INFORMS Annual Meeting, 2021
- Three “Committee’s Choice” presentations at INFORMS Annual Meeting 2021: 1) “Bringing STEM to Underserved Communities; 2) “Designing Efficient and Equitable Housing Allocation Policies From Data Collected In Deployment” ; 3) “Designing Policies for Allocating Housing to Persons Experiencing Homelessness”
- Nathan Jo: INFORMS Undergraduate Operations Research Prize Award 2021, Finalist; paper: “Learning Optimal Prescriptive Trees from Observational Data”
- Caroline Johnston: National Science Foundation (NSF) Graduate Research Fellowship (GRFP) 2021
- Aida Rahmattalabi: Grace Hopper Celebration Student Scholarship, 2021
- Nathan Jo: won the USC university-wide Discovery Scholar Prize Competition (includes \$10,000 prize to attend PhD program), 2021
- Nathan Jo: earned the USC Discovery Scholar distinction for his first author paper on “Learning optimal prescriptive trees from observational data”
- Aida Rahmattalabi: Bayer INFORMS Scholarship, 2020
- Christopher Doehring: INFORMS Undergraduate Operations Research Prize Award 2020, Finalist; paper: “Constructing Data-Driven Uncertainty Sets for Conserving Biodiversity via Robust Optimization”
- Kathryn Dullerud: Voted Audience Choice Presentation at Viterbi Summer Research Student Showcase 2020 for her presentation on evaluating fairness of the LA homeless housing allocation system titled “A case study on the performance of housing allocation policies among people experiencing homelessness”

In the list below, I indicate with:

(★) graduate students co-authors and CAIS summer fellows co-authors that I advise

(★★) graduate students co-authors on whose PhD thesis committee I was

Journal Publications (papers under review)

“Learning optimal prescriptive trees from observational data,” (★) N. Jo, (★) S. Aghaei, A. Gómez, P. Vayanos. Under review at *Management Science*, 2021.

Earned Nathan Jo the USC Discovery Scholar distinction

Earned Nathan Jo the USC university-wide Discovery Scholar Prize Competition

INFORMS Undergraduate Operations Research Prize Award 2021, Finalist

“Strong optimal classification trees,” (★) S. Aghaei, A. Gómez, P. Vayanos. Under second round of review at *Operations Research* (after major revision), May 2021. (extension to the paper “Learning optimal classification trees: strong max-flow formulations” available on ArXiv).

“ROC++: robust optimization in C++,” P. Vayanos, (★) Q. Jin, G. Elissaios. Minor revision at *INFORMS Journal on Computing*, January 2022.

“Robust active preference elicitation,” P. Vayanos, (★) Y. Ye, (★) D. McElfresh, J. Dickerson, E. Rice. Under second round of review at *Management Science* (after R&R, previous title “Active preference elicitation via adjustable robust optimization”), October 2021.

“Robust optimization with decision-dependent information discovery,” P. Vayanos, A. Georghiou, (★) H. Yu. Major Revision at *Management Science*, January 2021.

Journal Publications (accepted or in print)

“A community-partnered approach to social network data collection for a large and partial network,” M. Izenberg, R. Brown, C. Siebert, R. Heinz, (★) A. Rahmattalabi, P. Vayanos. *Field Methods*, 35(2), 22.

“Cost-sharing mechanism design for ride-sharing,” (★★) S. Hu, M.M. Dessouky, N.A. Uhan, P. Vayanos. *Transportation Research Part B*, June 2021.

“Associations between the Vulnerability Index-Service Prioritization Decision Assistance Tool (VI-SPDAT) and housing stability among single adults experiencing homelessness in the U.S.,” L. Petry, H.-T. Hsu, C. Hill, M. Morton, P. Vayanos, E. Rice. *Cityscape*, 23(2), 293-324, 2021.

“Correlates of housing sustainability among youth placed into permanent supportive housing and rapid re-housing: a survival analysis,” H.-T. Hsu, C. Hill, M. Holguin, L. Petry, (★) D. McElfresh, P. Vayanos, M. Morton, E. Rice, Accepted for publication at *Journal of Adolescent Health*, March 2021.

“Understanding wait times in rapid rehousing among homeless youth: a competing risk survival analysis,” (★) H.-T.Hsu, E. Rice, (★) J. Wilson, S. Semborski, P. Vayanos, M. Morton, *The Journal of Primary Prevention*, 2019.

“Linking homelessness vulnerability assessments to housing placements and outcomes for youth,” E. Rice, M. Holguin, H.-T. Hsu, M. Morton, P. Vayanos, M. Tambe, and (★) H. Chan, *Cityscape*, 20(3), Office of Policy Development and Research (PD&R) of the US Department of Housing and Urban Development (HUD), 2018.

“Robust multiclass queuing theory for wait time estimation in resource allocation systems,” C. Bandi, N. Trichakis and P. Vayanos. *Management Science*, 65(1), pp. 152-187, 2018.

“Chance-constrained optimization for refinery blend planning under uncertainty,” Y. Yang, P. Vayanos and P.I. Barton. *Industrial & Engineering Chemistry Research*, 56 (42), pp. 12139–12150, 2017.

“A constraint sampling approach for multi-stage robust optimization,” P. Vayanos, D. Kuhn and B. Rustem. *Automatica*, 48(3):459–471, 2012.

“Characterization of signal modality: exploiting signal nonlinearity in machine learning and signal processing,” B. Jelfs, S. Javidi, P. Vayanos and D.P. Mandic. *Journal of Signal Processing Systems*, 61(1):105–115, 2009.

“Online detection of the modality of complex-valued real world signals,” D.P. Mandic, P. Vayanos, M. Chen and S.-L. Goh. *International Journal of Neural Systems*, 18(2):67–74, 2008.

Conference Papers under Review

“Learning optimal fair classification trees,” (★) N. Jo, (★) S. Aghaei, (★) J. Benson, A. Gómez, P. Vayanos. Under review for *ACM Conference on Fairness, Accountability, and Transparency (FAccT)*, 2022.

“Learning resource allocation policies from observational data with an application to homeless services delivery,” (★) A. Rahmattalabi, P. Vayanos, (★) K. Dullerud, E. Rice. Under review for *ACM Conference on Fairness, Accountability, and Transparency (FAccT)*, 2022.

Highlighted as “Committee’s Choice” presentation at INFORMS Annual Meeting 2021

Rigorously Refereed Conference Publications: Full Papers (accepted or in print)

Typical acceptance rates for these conferences are usually about 25% or less

“Fair influence maximization: a welfare optimization approach,” (★) A. Rahmattalabi, S. Jabbari, H. Lakkaraju, P. Vayanos, M. Zellner, R. Brown, E. Rice, M. Tambe. In *Proceedings of the 35th AAAI Conference on Artificial Intelligence (AAAI)*, 2021. (acceptance rate \sim 21% in year of submission)

“Exploiting bounded rationality in risk-based cyber camouflage games,” (★) O. Thakoor, S. Jabbari, P. Aggarwal, C. Gonzales, M. Tambe, P. Vayanos. In *Proceedings of the 11th International Conference, GameSec*, 2020.

“Exploring algorithmic fairness in robust graph covering problems,” (★) A. Rahmattalabi, P. Vayanos, A. Fulginiti, E. Rice, B. Wilder, A. Yadav, M. Tambe. In *Proceedings of the 33rd Conference on Neural Information Processing Systems (NeurIPS)*, 2019. (acceptance rate \sim 21% in year of submission)

“The street-level realities of data practices in homeless services provision,” (★) N. Karusala, (★) J. Wilson, P. Vayanos, E. Rice. In *Proceedings of the 22nd ACM on Human-Computer Interaction 3, Conference on Computer-Supported Cooperative Work and Social Computing (CSCW)*, 2019.

“Cyber camouflage games for strategic deception,” (★) O. Thakoor, M. Tambe, P. Vayanos, H. Xu, C. Kiekintveld, F. Fang. In *Proceedings of the 10th International Conference, GameSec*, 2019.

“Learning optimal and fair decision-trees for non-discriminative decision-making,” (★) S. Aghaei, (★) M. J. Azizi, P. Vayanos. In *Proceedings of the 33rd AAAI Conference on Artificial Intelligence*, 2019. (acceptance rate \sim 16% in year of submission)

“Imbalanced collusive security games,” H.-C. Ou, M. Tambe, B. Dilkina, P. Vayanos. In *Proceedings of the 9th International Conference, GameSec*, 2018.

“A robust optimization approach to designing near-optimal strategies for constant-sum monitoring games,” (★) A. Rahmattalabi, P. Vayanos, and M. Tambe. In *Proceedings of the 9th International Conference, GameSec*, 2018.

“From empirical analysis to public policy: evaluating housing systems for homeless youth,” (★) H. Chan, E. Rice, P. Vayanos, M. Tambe, and M. Morton. In *Proceedings of European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD)*, 2018.

“The price of usability: designing operationalizable strategies for security games,” (★★) S. McCarthy, (★) C. Laan, K. Wang, P. Vayanos, M. Tambe, and, A. Sinha. In *Proceedings of the International Joint Conference on Artificial Intelligence*, 2018.

“Designing fair, efficient, and interpretable policies for prioritizing homeless youth for housing resources,” (★) M. J. Azizi, P. Vayanos, B. Wilder, E. Rice and M. Tambe. In *Proceedings of the 15th International Conference on the Integration of Constraint Programming, Artificial Intelligence, and Operations Research (CPAIOR)*, 2018.

Invited to *Constraints* journal fast track for outstanding papers.

“Learning about cyber deception through simulations: predictions of human decision making with deceptive signals in Stackelberg security games,” E. A. Cranford, C. Lebiere, C. Gonzales, S. Cooney, P. Vayanos, M. Tambe. In *Proceedings of CogSci*, 2018.

“Deceiving cyber adversaries: a game theoretic approach,” A. Schlenker, M. Tambe, L. Tran-Thanh, P. Vayanos, Y. Vorobeychik, O. Thakoor, H. Xu, and F. Fang. In *Proceedings of the 17th International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, 2018.

“Equilibrium refinement in security games with arbitrary scheduling constraints,” K. Wang, Q. Guo, P. Vayanos, M. Tambe, and B. An. In *Proceedings of the 17th International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, 2018.

“Strategic coordination of human patrollers and mobile sensors with signaling for security games,” H. Xu, K. Wang, P. Vayanos, and M. Tambe. In *Proceedings of the 32nd AAAI Conference on Artificial Intelligence*, 2018.

“Utilizing housing resources for homeless youth through the lens of multiple multi-dimensional knapsacks,” (★) H. Chan, L. Tran-Thanh, B. Wilder, E. Rice, P. Vayanos, M. Tambe. In *Proceedings of the AAAI/ACM Conference on Artificial Intelligence, Ethics, and Society*, 2018.

“Adjustable robust optimization for multi-stage threat screening games,” (★★) S. McCarthy, P. Vayanos, and M. Tambe, In *Proceedings of the International Joint Conference on Artificial Intelligence*, pp. 3770–3776, 2017.

“Decision rules for information discovery in multi-stage stochastic programming,” P. Vayanos, D. Kuhn and B. Rustem. In *Proceedings of the 50th IEEE Conference on Decision and Control*, pp. 7368–7373, 2011.

“Hedging electricity swing options in incomplete markets,” P. Vayanos, W. Wiesemann and D. Kuhn. In *Proceedings of the 18th IFAC World Congress*, pp. 846–853, 2011.

“Online tracking of the degree of nonlinearity within complex signals,” D.P. Mandic, P. Vayanos, S. Javidi, B. Jelfs and K. Aihara. In *Proceedings of the IEEE International Conference on Acoustics, Speech and Signal Processing*, pp. 2061–2064, 2008.

“Collaborative adaptive learning using hybrid filters,” D.P. Mandic, P. Vayanos, C. Boukis, B. Jelfs, S.-L. Goh, T. Gautama and T.M. Rutkowski. In *Proceedings of the IEEE International Conference on Acoustics, Speech and Signal Processing*, 3:921–924, 2007.

“Online detection of the nature of complex-valued signals,” P. Vayanos, S.-L. Goh and D.P. Mandic. In *Proceedings of the 16th IEEE Signal Processing Society Workshop on Machine Learning for Signal Processing*, pp. 173–178, 2006.

“An online method for detecting nonlinearity within a signal,” B. Jelfs, P. Vayanos, M. Chen, S.-L. Goh, C. Boukis, T. Gautama, T.M. Rutkowski, T. Kuh and D.P. Mandic. In *Proceedings of the 10th International Conference on Knowledge-Based & Intelligent Information & Engineering Systems*, 4253:1216–1223, 2006.

Other Publications (workshops, extended abstracts, etc.)

“Learning optimal prescriptive trees from observational data,” (★) N. Jo, (★) S. Aghaei, A. Gómez, P. Vayanos. In *36th AAAI Conference on Artificial Intelligence (AAAI), AAAI Workshop on AI for Behavior Change*, 2022.

“Optimal robust classification trees,” (★) N. Justin, (★) S. Aghaei, A. Gómez, P. Vayanos. In *36th AAAI Conference on Artificial Intelligence (AAAI), AAAI Workshop on Adversarial Machine Learning and Beyond*, 2022.

“Preference elicitation and aggregation to aid with patient triage during the COVID-19 pandemic,” (★) C. Johnston, (★) S. Blessenhohl, P. Vayanos, *International Conference on Machine Learning (ICML) Workshop on Participatory Approaches to Machine Learning*, 2020

“Preference elicitation and aggregation to aid with patient triage during the COVID-19 pandemic,” (★) C. Johnston, (★) S. Blessenhohl, P. Vayanos, *Harvard CRCS Workshop on AI for Social Good*, 2020

“Fairness in public health preventative interventions,” (★) A. Rahmattalabi, S. Jabbari, H. Lakkaraju, P. Vayanos, M. Tambe. In *34th AAAI Conference on Artificial Intelligence (AAAI), Health Intelligence Workshop* 2020.

“Learning optimal classification trees: strong max-flow formulations,” (★) S. Aghaei, A. Gomez, P.

Vayanos. Extended abstract in *Proceedings of the 17th International Conference on the Integration of Constraint Programming, Artificial Intelligence, and Operations Research (CPAIOR)*, 2020.

“Robust active preference elicitation,” (★) D. McElfresh, P. Vayanos, J. Dickerson, E. Rice, *Revenue Management & Pricing Conference*, 2019.

“Robust peer-monitoring on graphs with an application to suicide prevention in social networks,” (★) A. Rahmattalabi, P. Vayanos, A. Fulginiti, M. Tambe. Extended Abstract at *18th International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, 2019.

“General-sum cyber deception games under partial attacker valuation information,” (★) O. Thakoor, M. Tambe, P. Vayanos, H. Xu, C. Kiekintveld. Extended Abstract at *18th International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, 2019.

“Evidence from the past: AI decision aids to improve housing systems for homeless youth,” (★) H. Chan, E. Rice, P. Vayanos, M. Tambe, and M. Morton. In *Proceedings of the Association for the Advancement of Artificial Intelligence (AAAI) 2017 Fall Symposium Series*, 2017.

“Explanation systems for influence maximization algorithms,” A. Yadav, (★) A. Rahmattalabi, E. Kamar, P. Vayanos, M. Tambe, and V.L. Noronha In *Proceedings of the 3rd International Workshop on Social Influence Analysis*, 2017.

Journal Papers in Preparation

“Robust multi-stakeholder preference elicitation and aggregation,” (★) C. Johnston, (★) S. Blessenhohl, P. Vayanos. In preparation for submission to *Operations Research*, 2021.

“Conserving biodiversity via adjustable robust optimization,” (★) Y. Ye, (★) C. Doehring, A. Georghiou, H. Robinson, P. Vayanos. In preparation for submission to *Management Science*, 2021.

“Distributionally robust optimization with decision-dependent information discovery,” (★) Q. Jin, A. Georghiou, P. Vayanos, G. Hanasusanto. In preparation for submission to *INFORMS Journal on Computing*, 2021.

“Optimal robust classification trees,” (★) N. Justin, (★) S. Aghaei, A. Gómez, P. Vayanos. In preparation for submission to *Operations Research*, 2021.

“ExplOR: Bringing STEM Education to Underserved Communities,” (★) C. Johnston, (★) A. Rahmattalabi, B. Tang, N. Justin, P. Vayanos. In preparation for submission to *INFORMS Transactions on Education*, 2021.

Highlighted as “Committee’s Choice” presentation at INFORMS Annual Meeting 2021

“Learning optimal policies for allocating housing to people experiencing homelessness from data collected in deployment,” (★) B. Tang, C. Koçyiğit, P. Vayanos. In preparation for submission to *Management Science*, 2021.

Highlighted as “Committee’s Choice” presentation at INFORMS Annual Meeting 2021

Conference Papers in Preparation

“A framework for evaluating fairness of contextual resource allocation systems,” (★) K. Dullerud, (★) N. Jo, (★) B. Tang, (★) S. Aghaei, P. Vayanos. In preparation for submission to *ACM Conference on Fairness, Accountability, and Transparency (FAccT)*, 2022.

BOOK CHAPTERS

“Collaborative adaptive filters for online knowledge extraction and information fusion”, B. Jelfs, P. Vayanos, S. Javidi, S.-L. Goh and D.P. Mandic. *Signal Processing Techniques for Knowledge Extraction and Information Fusion*, pp. 1–20. Springer, 2008.

“Exploiting nonlinearity in adaptive signal processing”, P. Vayanos, M. Chen, B. Jelfs and D.P. Mandic. *Advances in Nonlinear Speech Processing*, vol. 4885 of *Lecture Notes in Computer Science*, pp. 57–77. Springer, 2007.

RESEARCH GRANTS

Proposals Funded

- “CAREER: Robust, Interpretable, and Fair Allocation of Scarce Resources in Socially Sensitive Settings,” NSF Operations Engineering; Role: Sole PI; Total Award Period Covered: 05/01/2021-04/30/2026 (5 Years); Total Award Amount: \$519,682.

- “Addressing Ethical Dilemmas during the COVID-19 Pandemic through AI,” USC Zumberge Special Solicitation – Epidemic & Virus Related Research and Development award; Role: Sole PI; Total Award Period Covered: 07/01/20-05/28/22; Own Share: \$28,047.
- “CES Triage Tool Redesign and Implementation,” Conrad Hilton Foundation, Homelessness Policy Research Institute, Home for Good Foundation; Role: Co-PI (PI: Eric Rice); Total award amount: \$1,450,000; Own Share: \$334,000.
- “Realizing Cyber Inception: Towards a Science of Personalized Deception for Cyber Defense,” MURI (Multidisciplinary University Research Initiative) US-Army-Army Research Office; Award ID: W911NF-17-1-0370; Role: PI, since August 2019 (Original PI and project lead: M. Tambe); Total Award Period Covered: 05/16/2017-05/15/2022; Total Award Amount: \$6,206,947; Own Share: \$313,353.
- “Predictive Modeling for Early Identification of Suicidal Thinking in Social Networks,” U.S. Army Research Laboratory; Award ID: W911NF-17-1-0445; Role: PI on satellite from USC School of Social Work (PI from SW: Eric Rice); Satellite Award Amount: \$12,420.
- “S&CC: Landslide Risk Management in Remote Communities: Integrating Geoscience, Data Science, and Social Science in Local Context,” NSF Smart & Connected Communities; Role: Co-PI (PI: Robert Lempert; Collaborative Grant with RAND, University of Oregon, Sitka Sound Science Center); Total Award Period Covered: 9/01/19-08/31/22; Total Award Amount: \$2,100,974; Own Share: \$216,218.
- “Cost-Sharing Mechanisms for Ridesharing,” METRANS University Transportation Center and National Center for Sustainable Transportation, U.S. Department of Transportation, Role: co-PI (PI: Maged Dessouky); Total Award Period Covered: 09/2018-09/2019; Total Award Amount: \$100,000; Own Share: \$41,244.
- “Preserving Biodiversity via Robust Optimization,” NSF Operations Engineering Program; Award #: OE-1763108; Role: PI (with Co-PI: B. Dilkina); Total Award Period Covered: 07/15/2018-07/14/2022 (4 Years); Total Award Amount: \$535,335; Own Share: \$403,638.
- “Designing Fair, Efficient, and Interpretable Policies for Allocating Scarce Resources,” James H. Zumberge Faculty Research & Innovation Fund Diversity & Inclusion Grant Program; Role: sole PI; Total Award Period Covered: 07/2018-07/2019; Total Award Amount: \$30,000; Own Share: \$30,000.
- “Socially Optimal Personalized Routing with Preference Learning,” METRANS University Transportation Center and National Center for Sustainable Transportation, U.S. Department of Transportation; Role: PI (co-PI: Maged Dessouky); Award ID: DTRT13-G-UTC57; Total Award Period Covered: 08/2017-07/2018; Total Award Amount: \$99,998; Own Share: \$79,096.
- “Multiplayer attacker-defender security games,” DARPA Seedling (via Lockheed Martin Corporation); Role: Co-PI (with PI: M. Tambe and Co-PI: Bistra Dilkina); Total Award Period Covered: 12/18/2017-1/07/2018; Total Award Amount: \$100,000.
- “Playing Security Games With No Time for Mapping Full Networks: Maximizing Influence in Uncharted Social Networks,” U.S. Army Research Laboratory’s Army Research Office (ARO); Award #: W911NF-11-1-0332; Role: Co-PI (PIs: Milind Tambe and Eric Rice); Total Award Period Covered: 2/1/2017-9/1/2017; Total Award Amount: \$500,000; Own Share: \$150,000.
- “Data-Driven Optimization in the Small Data Regime”, Outlier Research Grant, Institute for Advanced Studies in Business; Role: Co-Investigator (with Vishal Gupta and Paat Rusmevichientong); Total Award Duration: 3 years; Total Award Amount: \$25,000.
- “Conference on Non-Convex Statistical Learning,” NSF Division Of Mathematical Sciences; Award #: 1719635; Role: Co-PI (with PI: Jong-Shi Pang and Co-PI: Meisam Razaviyayn); Total Award Period Covered: 04/15/2018-3/31/2018; Total Award Amount: \$15,000.
- As postdoc at MIT, devised and wrote two project proposals that led to a total of \$180,000 being secured by MIT and a patent being filed jointly with BP (US patent application number: 62/080852; international patent application number: PCT/US2015/061161).

Gifts

- Living to Love Another Day Foundation: \$5,000 to cover incentives for deployment of suicide prevention intervention published at NeurIPS 2019.

- Trojan League of South Bay: \$1,000 towards housing allocation project.

Supplements

- “Preserving Biodiversity via Robust Optimization,” NSF Operations Engineering REU (Research Experience for Undergraduates) Supplement; Role: PI (with Co-PI: B. Dilkina); Total Award Period Covered: 07/15/2018-07/14/2022 (4 Years); Total Award Amount: \$8,000; Own Share: \$8,000.
- “CAREER: Robust, Interpretable, and Fair Allocation of Scarce Resources in Socially Sensitive Settings,” NSF Operations Engineering REU (Research Experience for Undergraduates) Supplement; Role: Sole PI; Total Award Period Covered: 05/01/2021-04/30/2026 (5 Years); Total Award Amount: \$8,000.

STUDENT ADVISING

PhD Students

- Aida Rahmattalabi (student in Computer Science; 2016–Today, joint with Milind Tambe; passed her qualifying exam in Aug. 2018; passed her thesis proposal in May 2020; internship at Stanford University, RegLab; internship at Sony AI with Alice Xiang, Senior Research Scientist at Sony AI and Head of AI Ethics Office at Sony Group)
- Sina Aghaei (student in Industrial & Systems Engineering; 2017–Today; passed his screening exam in Sept. 2018; passed his qualifying exam in Mar. 2021)
- Qing Jin (student in Industrial & Systems Engineering; 2019–Today; passed her screening exam in Aug. 2020)
- Caroline Margaret Johnston (student in Industrial & Systems Engineering; 2019–Today; passed her screening exam in Aug. 2020) – recipient of NSF GRFP 2021
- Yingxiao Ye (student in Industrial & Systems Engineering; 2019–Today; passed his screening exam in Aug. 2020)
- Nathan Justin (student in Computer Science; 2020–Today)
- Bill Tang (student in Industrial & Systems Engineering; 2020–Today; passed his screening exam in Aug. 2021)

Masters’ Students

- Rubina (Iman) Kabir (summer 2020, M.S. in Applied Data Science)
- Dhruv Mathew (2020–, M.S. in Computer Science, Data Science)
- Aditya Chandupatla (2019-2020, M.S. in Computer Science, Data Science)
- Jeffy Jacob (2019, M.S. in Computer Science, Data Science)
- Aayush Sinha (2018, M.S. in Data Informatics)
- Camilo Barrera (2018, M.S. in Operations Research)
- Jing Zheng (2017, M.S. in Operations Research Engineering)

Undergraduate Students

- Shreyas Narayanan (2021–Today, Data Science and Applied & Computational Mathematics)
- Jack Benson (spring 2021, undergraduate student in ISE)
- Nathanael Jo (2020–2021, MS Applied Data Science, BS Applied Mathematics, BA Data Science); funded through award from USC ISE Epstein Institute since Jan. 2021; earned the USC Discovery Scholar distinction for his first author paper on “Learning optimal prescriptive trees from observational data”; won the USC university-wide Discovery Scholar Prize Competition (includes \$10,000 prize to attend PhD program), 2021; INFORMS Undergraduate Operations Research Prize Award 2021, Finalist
- David Desai (summer 2019, undergraduate student in ISE); funded through Viterbi Summer Research support
- Kathryn Dullerud (2019–Today, BS in Economics/Math); recipient of USC Provost’s Research Fellowship (Fall 2020, Summer 2021); Voted Audience Choice Presentation at Viterbi Summer Research Student Showcase 2020 for her presentation on evaluating fairness of the LA homeless housing allocation system titled “A case study on the performance of housing allocation policies among people experiencing homelessness”
- Christopher Doering (2018–Today, undergraduate in ISE); recipient of Viterbi Fellows Merit Research Assistantship; funded on NSF REU grant since Feb. 2020; INFORMS Undergraduate

Research Paper Prize Finalist 2020

- Boyuan (Caroline) Liu (2016–2018, undergraduate student in ISE); recipient of WiSE Researcher Grant (\$4,000) to conduct research under my supervision

Advised CAIS Summer Fellows

- Duncan McElfresh (2018-2019, PhD student, Applied Mathematics, University of Maryland)
- Naveena Karusala (2018, PhD student, Computer Science, University of Washington)
- Jennifer Wilson (2018, PhD student, Social Work, University of Denver)
- Hau Chan (2017, next position: Assistant Professor, Department of Computer Science and Engineering, University of Nebraska-Lincoln)

Other Visiting Students

- Patrick Vossler (2021, PhD student, USC Marshall School of Business)
- Nathanael Jo (2021–Today, RegLab, Stanford)
- Simon Blessenhohl (2020, PhD student, USC School of Philosophy)
- Sulagna Mukherjee (2019, PhD student, Computer Science, USC)

CORPORATE EXPERIENCE

BP Plc. **2013–2015**

Consultant, *Field of the Future Flagship, Decision Analytics*

- Data-driven waterflood optimization

BP Plc. **2012–2013**

Consultant, *Conversion Technology Center, Refining & Marketing, Research & Tech.*

- Gasoline blend planning under uncertainty

MIT Sloan School of Management, Cambridge, MA **2013–2015**

Consultant, *Executive MBA Program*

- Automated decision-support for team formation and project allocations
- Employed by the MIT Sloan School of Management Action Learning Labs since 2013

BNP Paribas, London, UK **2008–2009**

Corporate & Investment Bank

Contractor, Portfolio Optimization Team, Fixed Income Structuring

- Risk management advisory for corporate clients

JPMorgan Chase & Co., London, UK **2007–2008**

Worldwide Securities Services

Graduate, Business Unit Relationship Management, Global Custody Technology

- Facilitated communication between technical project managers and product managers, tracked project progress, assisted on project prioritization, budget and resource allocation

TEACHING EXPERIENCE

University of Southern California **2017–Today**

Industrial & Systems Engineering

Lecturer (2022)

- ISE599 Analytics for Social Impact (PhD level)

Lecturer (2017–Today)

- ISE330 Introduction to Operations Research: Deterministic Models (undergraduate level, ~30 students)

Lecturer (2015–2021)

- ISE631 Linear Programming (graduate level, ~15 students)

Guest Lecturer (2015-2017, 2021)

- ISE105 Introduction to Industrial & Systems Engineering (undergraduate level, ~30 students)

University of Southern California **2015–Today**

Computer Science

Guest Lecturer (2018-2019, 2021)

- CSCI697 Seminar in Computer Science Research (graduate level, ~30 students)

Guest Lecturer (2017-2019, 2021)

- CSCI599 Artificial Intelligence for Social Good (graduate level, ~30 students)
- University of Southern California** **2015–2016**
Viterbi School of Engineering
 Guest Lecturer
- ENGR102 Engineering Freshman Academy (undergraduate level, ~30 students)
- MIT Sloan School of Management** **2014**
Operations Research & Statistics Group
 Lecturer
- 15.093 Optimization Methods (graduate and undergraduate level, ~80 students)
- MIT Sloan School of Management** **2014**
Operations Research Center
 Guest Lecturer and Assistant in Teaching
- 15.094 Robust Modeling, Optimization & Computation (Ph.D. level, ~40 students)
- Massachusetts Institute of Technology** **2013**
Department of Chemical Engineering
 Guest Lecturer
- 10.557 Mixed-Integer and Non-Convex Optimization (graduate level, ~30 students)
- Imperial College London** **2009–2011**
Department of Computing
 Guest Lecturer and Teaching Assistant
- CO343 Operations Research (M.Eng. level, ~80 students)
- Imperial College London** **2011**
Department of Computing
 Teaching Assistant
- CO422 Computational Finance (M.Eng. level, ~130 students)

MEDIA/PRESS
COVERAGE

External

- [VentureBeat](#), “How AI can empower communities and strengthen democracy” (July 2020)
- [livemint](#), “How Artificial Intelligence is progressing in mental healthcare” (Jan. 2020)
- [EurekAlert](#), “Can artificial intelligence help prevent suicides?” (Dec. 2019)
- [Health IT Analytics](#), “Using Artificial Intelligence to Strengthen Suicide Prevention” (Dec. 2019)
- [The Hindu Business Line](#), “AI for Suicide Prevention” (Dec. 2019)
- [Medium](#), “Could A.I. Help Get Homeless Youth Off the Streets?” (Jun. 2019)
- [KCAW](#), “Research team scouts locations for Sitka landslide warning system” (May 2019)
- [NPR Marketplace](#), “As artificial intelligence is used more and more for things like employee recruiting, a look at potential bias” (Jan. 2019)
- [Medical View](#), “Using AI to Fight Substance Abuse” (Sept. 2018)

Internal to USC or to other universities

- [“Modeling 3-D Molecules, Fighting Hate Speech, and Addressing Social Problems Using AI: USC Viterbi Faculty and Students Committed to K-12 Outreach”](#)
- [“Nathanael Jo Awarded USC Discovery Prize for 2020-2021”](#)
- [“Five USC Viterbi Faculty Receive 2021 NSF CAREER Awards”](#)
- [“Transdisciplinary research team led by USC professors will help Los Angeles reduce bias and disparity in homelessness services”, USC News \(Jun. 2020\)](#)
- [“Can AI Help Prevent Suicides?”, USC Viterbi \(Dec. 2019\)](#)
- [“ISE Research Featured at International Conference on Stochastic Programming”, USC Viterbi \(Aug. 2019\)](#)
- [“Can AI Reduce Race Bias in Homelessness?”, USC Viterbi \(Oct. 2018\)](#)
- [“Research partnership awarded \\$2.1m for landslide prediction project”, USC ISE \(Oct. 2018\)](#)
- [“AI for Social Good”, USC Viterbi Magazine \(Fall 2018\)](#)
- [“AI tool uses positive peer groups to fight substance abuse”, USC News \(Sep. 2018\)](#)
- [“USC Center for AI in Society Seeks to Reduce Military Suicides”, USC Viterbi \(May 2018\)](#)
- [“City of Stars”, USC Viterbi Magazine \(Fall 2017\)](#)

- [“Is There a Better Way to Allocate Organs to Transplant Patients?”](#), KelloggInsight (Dec. 2016)

CAIS Blogposts

- [“Using AI to Optimize Housing Resource Allocation”](#), CAIS Blogpost (Nov. 2019)

OTHER ACADEMIC ACTIVITIES **Community**

Editorial Positions

- [Associate Editor](#) for Computational Management Science (2020–Today)
- [Associate Editor](#) for Operations Research Letters, Optimization under Uncertainty and Machine Learning (2021–Today)

Officer Positions

- [Communications Officer](#), INFORMS section on Public Sector Operations Research (PSOR), 2021, re-elected 2022
- [Elected Member of the Committee on Stochastic Programming \(COSP\)](#), the governing body of the Stochastic Programming Society, 2019-2022

Strategic and Program Committee Member (OR and AI communities)

- [Program Committee \(PC\) member](#) for the 27th Conference on Principles and Practice of Constraint Programming (CP21)
- [Senior Program Committee \(SPC\) member](#) for the 35th AAAI Conference Special Track on AI for Social Impact (AISI)
- [Program Committee \(PC\) member](#) for the ACM Conference on Economics and Computation (EC20), Budapest, Hungary
- [Senior Program Committee \(SPC\) member](#) for the 34th AAAI Conference on Artificial Intelligence, New York, NY
- [Senior Program Committee \(SPC\) member](#) for the 34th AAAI Conference Emerging Track on AI for Social Impact (AISI), New York, NY
- [Member of adhoc INFORMS AI Strategy Advisory Committee](#): the committee is a source of expertise and advice to the INFORMS President, Board, and relevant Committees; we have been charged to help the INFORMS President and Board develop a good understanding of the scope of AI and to provide input that will help the Board make strategic decisions to help INFORMS thrive in a world where AI is an important national priority
- [Program Committee member](#) for the 3rd workshop on Mechanism Design for Social Good (MD4SG) held at EC 2019 in Phoenix, AZ
- [Program committee review board member](#) of First ACM SIGCAS Conference on Computing and Sustainable Societies (ACM COMPASS, 2018)

Conference Organization (OR and AI communities)

- [Track co-chair](#) for INFORMS Optimization Society meeting (IOS2022) for the “Optimization under Uncertainty” track (with Weijun Xie)
- [Chair](#) (with Sven Koenig and Bistra Dilkina) for the CPAIOR 2022 conference
- [Invited Session Chair](#) for a session on “*Robust Optimization for Machine Learning*” at INFORMS Annual Meeting 2021, Anaheim, CA
- [Invited Session Chair](#) for a session on “*Ethics in Analytics*” at EURO 2021, Athens, GR
- [Cluster Co-Chair](#) at CORS (Canadian OR Society) 2021 for the newly launched “OR and Social Good” cluster
- [Invited Session Chair](#) for a session on “*Robustness, Interpretability, and Fairness in Decision-Making for Social Good*” at CORS (Canadian OR Society) 2021, Toronto, CA

- Track chair for INFORMS Optimization Society meeting (IOS2020) for the “Optimization under Uncertainty” track (postponed to 2021)
- Cluster Chair at INFORMS 2019 for the Policy & Government cluster under Emerging Topics
- International Scientific Committee Member: International Conference on Stochastic Programming (ICSP) 2019, Trondheim, NOR; Organizer and Chair of Mini-Symposium on “Doing Good with Good RO”
- Organizer of Master Class on “CP, AI, and OR for Social Good” at CPAIOR 2019: organizing a master class on the integration of Constraint Programming, Artificial Intelligence, and Operations Research for Social Good, bringing together research leaders in the field to share their work with other researchers and PhD students
- Invited Session Chair for a session on “*Optimal Decision Trees*” at the EURO Conference, Athens, GR, 2021
- Invited Session Chair for a session on “*Robust Optimization under Endogenous Uncertainty: Theory, Computation, and Social Good Applications*” at the INFORMS Annual Meeting, 2020
- Invited Session Chair for two sessions on “*Data-Driven and Robust Optimization*” at the INFORMS Annual Meeting, 2018
- Invited Session Chair for a session on “*Data-Driven and Robust Optimization*” at ISMP, 2018
- Invited Session Chair for two sessions on “*Data-Driven and Robust Optimization*” at the INFORMS Annual Meeting: one session in the Optimization under Uncertainty cluster, one session sponsored by the Computing Society, 2017
- Organization committee member for the CNSL Conference on Nonconvex Statistical Learning
- Invited Session Chair for the “*Data-Driven and Robust Optimization*” session of the conference on Computational Management Science, Bergamo, IT, 2017
- Session Chair for the “*Theory and Applications of Robust Optimization*” session of the INFORMS Annual Meeting, San Francisco, CA, 2014
- Invited Session Chair for the “*Financial and Economic Applications of Game Theory and Optimal Control*” session of the 18th IFAC World Congress, Milan, IT, 2011
- Session Chair for the “*Risk Management*” session of the 4th CSDA International Conference on Computational and Financial Econometrics, London, UK, 2010
- Local organization committee member for the 9th International Conference on Computational Management Science, London, UK, 2012

Workshop Organization

- Co-organizer (with Sanmay Das, John Dickerson, Pascal Van Hentenryck, Sven Koenig, Ramayya Krishnan, and Radhika Kulkarni) of Workshop on Artificial Intelligence and Operations Research sponsored by Computing Community Consortium (CCC), INFORMS, and SIGAI, September 2021
- Co-organizer (with Eric Rice) of the 2021 CAIS Workshop on “AI and Equity”, April 2021

Proposal Reviewer

- Panelist for the 2020 NSF Graduate Research Fellowship Program (GRFP) for Computer and Information Science and Engineering (CISE)
- Ad hoc reviewer for the NSF DCL on “Disrupting Operations of Illicit Supply Networks” (2019)
- Panelist for the NSF Service, Manufacturing, and Operations Research (SMOR) Program, Unsolicited proposal panel, Optimization area (2016)

Judge for Paper and Poster Competitions

- Judge for the 2019 INFORMS Poster Session
- Judge for the 2019 INFORMS Health Application Society Student Paper Competition

- INFORMS Nicholson Prize committee member (2018-2019); chair for one of the Nicholson prize sessions at the INFORMS Annual Meeting

Other

- INFORMS Colloquia Panelist: panelist for the INFORMS Doctoral Student Colloquium “Job search” panel (2019, 2020, 2021) and for the INFORMS New Faculty Colloquium “Interdisciplinary Research and Writing Collaborative Grants” panel (2019)
- Increasing the Representation of Women in Science and Engineering: presentation at USC WiSE STEM Bytes Seminar and WiSE Research Symposium: share research with female students in diverse fields; Presentation at Mirman School Women in STEAM Conference: provide opportunities for students to interact with professionals in STEAM fields and challenge stereotypes before they form by exposing them to women role models; Currently, mentoring 3 female PhD students; A female undergraduate student, Boyuan (Caroline) Liu (2016–2018) received a WiSE Researcher Grant (\$4,000) to conduct research under my supervision.
- Outreach: Faculty Sponsor for The AI Robotics Ethics Society (AIRES) USC branch
- Review Editor for the Editorial Board of Optimization, a specialty of Frontiers in Applied Mathematics and Statistics (since 2016)
- INFORMS Optimization Society mailing list moderator (2016)
- Reviewer for the following journals, conference proceedings, and edited books: *Management Science, Operations Research, INFORMS Journal on Computing, Mathematical Programming, SIAM Journal on Optimization, Mathematics of Operations Research, Journal of Optimization Theory and Applications, Annals of Operations Research, European Journal of Operational Research, Computers & Operations Research, Automatica, Journal of Global Optimization, Energy Systems, Computational Management Science, Proceedings of 18th IFAC World Congress, Optimal Financial Decision Making under Uncertainty, Journal of Petroleum Science and Engineering, IFAC Conference on Manufacturing Modeling, Management and Control*
- Expert Advisory Board Member – AI Impact Alliance
- Member of INFORMS
- Member of AAAI

Department, School, and University

- USC Epstein Department of Industrial & Systems Engineering, Member of Diversity, Equity, and Inclusion Committee (2021)
- USC CAIS, Member of Diversity, Equity, and Inclusion Committee (2020)
- USC, Epstein Department of Industrial & Systems Engineering, Committee Member for the development of an action plan for sustained excellence for the department (2020) which helped raise a \$14M gift for the department
- USC, Viterbi School of Engineering, Viterbi Research Committee member (2018-2019)
- USC, Industrial & Systems Engineering, PhD Admissions Committee Member (2015, 2016, 2018); Proposed and executed buddy system and open house poster session that doubled acceptance rates of admitted students
- USC, Industrial & Systems Engineering, Committee Member for the design of the Masters’ in Analytics program (2015)
- PhD Qualifying Exam Committee Member: Laura Petry (USC SW, 2021), Justin Mulvaney (Marshall, 2020), Shichun Hu (ISE, 2020), Ninareh Mehrabi (CS, 2020), Aaron Farber (CS, 2020), Nazanin Alipourfard (CS, 2020), Dhruva Kartik Mokhasunavisu (EE, 2020), Shiva Nahabi (EE, 2019), Kai Wang (CS, 2019), Elizabeth Bondi (CS, 2018), He Luan, Ye Wang, Siyuan Song (ISE, 2017), Sara McCarthy (CS, 2017), Abdullah Alibrahim (ISE, 2015)
- PhD Committee Member: Shichun Hu (ISE, 2021), Dhruva Kartik Mokhasunavisu (EE, 2021), Justin Mulvaney (Marshall, 2021), Alipoufard Nazanin (CS, 2020), Shiva Nahabi (EE, 2020), Yang Cao (ISE, 2018), Sara McCarthy (CS, 2018), Ye Wang, Siyuan Song (ISE, 2018), Debarun Kar (CS, 2017), Negin Golrezaei (Marshall, 2017)
- Organizer of CAIS Seminar Series (Spring 2017, Spring 2018, Fall 2018, Fall 2019, Spring 2020, Fall 2020)

Plenary & Semi-Plenary Invited Talks

“Active preference elicitation via adjustable robust optimization”

- European Conference on Stochastic Optimization and Computational Management Science Conference (ECSO-CMS) (semi-plenary) (Jul. 2020; postponed to 2022)

“AI-Driven Housing Allocation for Homeless Persons”

- Partnership on AI / IBM Explainability Workshop (plenary invited talk), New York, NY (Feb. 2020)

“AI and Robust Optimization for Social Good”

- CP International Conference on Principles and Practice of Constraint Programming (plenary invited talk), Stamford, CT (Sept. 2019)

“Robust active preference elicitation to learn the moral priorities of policy-makers at LAHSA”

- ICSP International Conference on Stochastic Programming (semi-plenary invited talk), Trondheim, NO (Jul. 2019)

Keynote Talks & Distinguished Speaker Seminars

“Integer optimization for predictive and prescriptive analytics in high stakes domains”

- SoCal Machine Learning Symposium (keynote talk), UC San Diego (Mar. 2021)

“Designing robust, interpretable, and fair social and public health interventions”

- Workshop on AI for Social Good (keynote talk), International Joint Conference on Artificial Intelligence (IJCAI) (Jan. 2021)

“Assisting Vulnerable Communities through AI and OR: from Data to Deployed Decisions”

- Workshop on AI for Social Good (keynote talk), International Conference on Machine Learning (ICML) (Jun. 2019)

“Robust optimization with decision-dependent information discovery: active learning of the moral priorities of policy-makers”

- Clemson University Distinguished Speaker Series, part of a National Science Foundation Research Traineeship (NRT) Program grant (Nov. 2019)

University Seminars, Workshop & Symposia Presentations

Title TBD

- Department Seminar, Industrial & Systems Engineering (ISE), University of Florida Gainesville (Mar. 2022)
- Department Seminar, Industrial & Systems Engineering (ISyE), University of Minnesota (Apr. 2022)
- Social Impact Analytics Workshop, Robert H. Smith School of Business, University of Maryland (May 2022)

“Designing Robust, Interpretable, and Fair Social and Public Health Interventions”

- Waterloo Computational Mathematics colloquium, Centre for Computational Mathematics, University of Waterloo (Nov. 2021)
- University of Michigan Institute for Data Science (MIDAS) Seminar (Nov. 2021)

“Robustness, Interpretability, and Fairness in Machine Learning and Resource Allocation”

- Third Annual Responsible Machine Learning Virtual Summit, AI and Social Good, UC Santa Barbara Center for Responsible Machine Learning (CRML), Department of Computer Science, College of Engineering (Oct. 2021)

“Data-Driven Decision-Making for Social Impact”

- Virtual workshop on Artificial Intelligence/Operations Research sponsored by the Computing Community Consortium (CCC), the Institute for Operations Research and Management Science (INFORMS), and ACM SIGAI (Sep. 2021)

“Towards Efficient, Interpretable, and Fair Social Interventions”

- B’AI Global Forum at the University of Tokyo (Aug. 2021)

“Fair online allocation”

- ISI AI Futures Symposium on AI & Data Science, University of Southern California, LA (May 2021)

“Integer optimization for predictive and prescriptive analytics in high stakes domains”

- Machine Learning NeEDS Mathematical Optimization, IMUS-Instituto de Matemáticas de la Universidad de Sevilla and CBS-Copenhagen Business School (Apr. 2021)

“Designing efficient and equitable housing allocation policies from data collected in deployment”

- CAIS Symposium on Equity and AI, University of Southern California, LA (Apr. 2021)

“Designing robust, interpretable, and fair social and public health interventions”

- University of Vienna, Department of Statistics and Operations Research, ISOR Colloquium (Apr. 2021)
- University of Alabama, Culverhouse College of Business (Mar. 2021)
- University of Oklahoma, School of Industrial and Systems Engineering (Feb. 2021)
- University of Washington, Foster School of Business, Departmental Seminar, Seattle, WA (Jan. 2021)

“Active preference elicitation via adjustable robust optimization”

- Workshop on Optimization under Uncertainty, Centre de Recherches Mathématiques (CRM), part of the thematic semester on “The Mathematics of Decision Making”, Montreal, QC (Sep. 2021)
- Washington University in St. Louis, St. Louis, MO (Dec. 2020); Computational and Data Sciences guest presentation
- University of Wisconsin Madison Colloquium Series (Dec. 2020)
- Discrete Optimization Talks (Webinar) (May 2020)
- LIRMM Workshop on Robust Optimization, University of Aveiro, Aveiro, PT (Jul. 2020; postponed to 2021)
- Optimization Days 2020, HEC Montreal, Montreal, QC (May 2020; postponed to 2021)
- University of Washington, Foster School of Business, Departmental Seminar, Seattle, WA (Jan. 2021)

“Dealing with value disagreement in algorithmic systems via active preference elicitation and aggregation”

- Interdisciplinary Workshop on “Algorithmic Ethics: Perspectives from Philosophy and Computer Science”, University of Rochester (Online Workshop) (May 2020)

“AI and Robust Optimization for Social Good”

- Data for Good Seminar Series, Data Science Institute, Columbia University, NY (Oct. 2020)

“Robust active preference elicitation to learn the preferences of policy-makers at the Los Angeles Homeless Services Authority”

- Washington University in Saint Louis, Colloquium Talk, Computer Science & Engineering, St. Louis, MO (Nov. 2019)

“Robust optimization with decision-dependent information discovery: active learning of the moral priorities of policy-makers”

- Northwestern University, Industrial Engineering & Management Sciences, Departmental Seminar, Evanston, IL (May 2019)
- University of Texas, Austin, Industrial Engineering & Operations Research, Departmental Seminar, Austin, TX (May 2019)

“Two-stage robust optimization with decision-dependent information discovery”

- ICERM (Institute for Computational and Experimental Research in Mathematics) Workshop on Mathematical Optimization of Systems Impacted by Rare, High-Impact Random Events (Jun. 2019)

- Banff Workshop on “Models and Algorithms for Sequential Decision Problems under Uncertainty” (invited talk), Banff, AB (Jan. 2019)
- “Data-driven integer and robust optimization for scarce resource allocation”*
- University of Toronto, Department of Mechanical and Industrial Engineering, OR Seminar, Toronto, ON (Sept. 2018)
 - Columbia University, Department of Industrial Engineering & Operations Research, IEOR-DRO Seminar, New York, NY (Apr. 2018)
 - University of Michigan, Industrial and Operations Engineering, IOE Seminar, Ann Arbor, MI (Apr. 2018)
 - Carnegie Mellon University, Guest Lecture in “AI for Social Good” course at Institute for Software Research, Pittsburgh, PA (Mar. 2018)
- “Optimization and analytics for social good”*
- Georgia Tech, H. Milton Stewart School of Industrial & Systems Engineering, ISyE Special Seminar, Atlanta, GA (Nov. 2017)
 - University of Washington, Department of Industrial & Systems Engineering, Graduate Seminar Series, Seattle, WA (Nov. 2017)
- “Artificial Intelligence for social good: the case of public health”*
- Workshop on Artificial Intelligence and Social Good (invited talk), Microsoft Research India, Bangalore, IN (Oct. 2017)
- “Robust optimization & sequential decision-making”*
- Doctoral Consortium on Computational Sustainability 2017, University of Southern California, Los Angeles, CA (Jul. 2017)
- “Robust wait time estimation in resource allocation systems with application to kidney allocation”*
- Workshop on Distributionally Robust Optimization (invited talk), Banff International Research Station, Alberta, CN (Mar. 2018)
 - Bay Area Optimization Meeting 2017 - From Data to Decisions (invited talk), dedicated to Professor Roger J.-B. Wets on the occasion of his 80th birthday, University of California Davis, Davis, CA (May 2017)
 - USC WiSE Research Symposium (invited talk), Los Angeles, CA (Mar. 2017)
 - SoCal OR/OM Day 2016 (invited talk), UC Irvine, Irvine, CA (May 2016)
- “Dynamic learning and information discovery: an adaptive optimization perspective”*
- USC Electrical Engineering, Los Angeles, CA (Nov. 2015)
 - Teamcore Seminar, Computer Science, USC, Los Angeles, CA (Oct. 2015)
- “Data-driven learning under uncertainty: an adaptive optimization perspective”*
- Information and Decision Sciences, UIC College of Business (invited talk), Chicago, IL (Mar. 2015)
 - MIT Sloan Operations Management Seminar (invited talk), Cambridge, MA (Mar. 2015)
 - Amazon Seller Services, Fulfillment By Amazon (invited talk), Seattle, WA (Mar. 2015)
 - Industrial and Systems Engineering, USC (invited talk), Los Angeles, CA (Mar. 2015)
 - Mechanical and Industrial Engineering, University of Toronto (invited talk), Toronto, ON (Feb. 2015)
 - Operations Research & Industrial Engineering, UT-Austin (invited talk), Austin, TX (Feb. 2015)
 - Industrial and Systems Engineering, University of Florida (invited talk), Gainesville, FL (Feb. 2015)
- “Data-driven learning in dynamic pricing using adaptive optimization”*
- Industrial and Systems Engineering, Lehigh University (invited talk), Bethlehem, PA (Oct. 2014)
- “Refinery optimization: blend planning under uncertainty”*
- BP-MIT Conversion Research Program Technical Meeting, Boston, MA (May 2013)
- “Decision rules for information discovery in multi-stage stochastic programming”*

- Industrial Consortium Meeting of the Centre for Process Systems Engineering (invited talk), London, UK (Dec. 2011)
- “Hedging electricity swing options in incomplete markets”*
- Industrial Consortium Meeting of the Centre for Process Systems Engineering (invited talk), London, UK (Dec. 2010)

Interdisciplinary Workshop Participation

- CAIS Symposium on Equity and AI, University of Southern California, LA (Apr. 2021)
- Algorithmic Ethics: Perspectives from Philosophy and Computer Science, University of Rochester (May 2020); Interdisciplinary workshop jointly organized by the Goergen Institute for Data Science and the Department of Philosophy at the University of Rochester; The workshop brings philosophical discussions of justice, fairness and explainability into conversation with the technical computer science literature
- Partnership on AI / IBM Explainability Workshop, New York, NY (Feb. 2020); This workshop brings together researchers and industry scientists who have worked on explainability with stakeholders from policy, law, and other Civil Society Organizations to bridge the gap in the existing literature to make the research more helpful at scale
- Microsoft Research (MSR) India Workshop on AI and Societal Good, Microsoft Research India, Bangalore, IN (Sept. 2018)
- Microsoft Research (MSR) India Workshop on Artificial Intelligence and Social Good, Microsoft Research India, Bangalore, IN (Oct. 2017)

Tutorials & Master Classes

Title TBD

- 2022 CORS / INFORMS International Conference (Jun. 2022)
- “Conducting Research in AI, ML, and OR for Social Good”*
- CORS 2021 Annual Conference of the Canadian Operational Research Society (Jun. 2021)
- “Robust Active Preference Elicitation to Learn the Moral Priorities of Policy-Makers at LAHSA”*
- CPAIOR 2019 Conference on the Integration of Constraint Programming, Artificial Intelligence, and Operations Research (Jun. 2019)

Conference Presentations

“Bringing STEM Education to Underserved Communities”

- INFORMS Annual Meeting (Oct. 2021)
- Highlighted as “Committee’s Choice” presentation at INFORMS Annual Meeting 2021

“Robust active preference elicitation via adjustable robust optimization”

- CORS Annual Meeting (invited talk), Virtual Event (Jun. 2021)

“Robust optimization with decision-dependent information discovery”

- INFORMS Annual Meeting (invited talk), Virtual Event (Nov. 2020)

“Robust active preference elicitation to learn the moral priorities of policy-makers at LAHSA”

- INFORMS Annual Meeting (invited talk), Seattle, WA (Oct. 2019)
- ICCOPT International Conference on Continuous Optimization (invited talk), Berlin, DE (Aug. 2019)

“Two-stage robust optimization with decision-dependent information discovery”

- INFORMS Annual Meeting (invited talk), Phoenix, AZ (Nov. 2018)

“Designing fair, efficient, and interpretable policies for prioritizing homeless youth for housing resources”

- INFORMS Annual Meeting (invited talk), Seattle, WA (Oct. 2019)
 - International Symposium on Mathematical Programming, Bordeaux, FR (Jul. 2018)
 - International Conference on the Integration of Constraint Programming, Artificial Intelligence, and Operations Research, Delft, NL (Jun. 2018)
- “Robust wait time estimation in resource allocation systems with application to kidney allocation”*
- INFORMS (invited talk), Houston, TX (Oct. 2017)
 - CMS Computational Management Science (invited talk), Bergamo, IT (May 2017)
 - POMS (invited talk), Seattle, WA (May 2017)
 - ICCOPT (invited talk), Tokyo, JP (Aug. 2016)
 - INFORMS International Conference (invited talk), Waikoloa Village, HI (Jun. 2016)
- “Data-driven learning in dynamic pricing using adaptive optimization”*
- INFORMS Annual Meeting (invited talk), Philadelphia, PA (Nov. 2015)
 - ISMP 2015 (invited talk), Pittsburgh, PA (Jul. 2015)
 - POMS 26th Annual Conference (invited talk), Washington D.C. (May 2015)
 - INFORMS Annual Meeting (invited talk), San Francisco, CA (Nov. 2014)
 - Manufacturing Services & Operations Management Conference, Seattle, WA (Jun. 2014)
 - 11th Intl. Conference on Computational Management Science (invited talk), Lisbon, PT (May 2014)
- “Control and discovery of information in robust optimization”*
- 26th European Conference on Operational Research (invited talk), Rome, IT (Jul. 2013)
- “Decision rules for information discovery in multi-stage stochastic programming”*
- 50th IEEE Conference on Decision and Control, Orlando, FL (Dec. 2011)
 - 8th Intl. Conference on Computational Management Science, Neuchâtel, CH (Apr. 2011)
- “Hedging electricity swing options in incomplete markets”*
- 18th IFAC World Congress, Milan, IT (Aug. 2011)
 - 4th Intl. Conference on Computational and Financial Econometrics, London, UK (Dec. 2010)
- “A constraint sampling approach for multi-stage robust optimization”*
- 7th Intl. Conference on Computational Management Science, Vienna, AU (Jul. 2010)

Panelist

- Panelist for “Tradeoffs of AI in Social Science with implications for Accuracy, Privacy, Equity”, AI for Behavior Change Workshop, AAAI 2022.
- Panelist for “Frontiers and potentials of AI techniques in social good domains,” AI for Social Good Symposium, April 2020.

Outreach

“ExplOR Event”

- Organized the second iteration of the ExplOR event for highschool students (Dec. 2021)
- Organized ExplOR, a day-long program aimed to bring STEM education to underserved communities, focusing on topics in Operations Research (OR) and Artificial Intelligence (AI) applied to problems of Social Good in collaboration with educators, staff, and students at Code in the Schools and STEM Academy of Hollywood (Nov. 2020)

“Housing Allocation for Homeless Persons: Fairness, Transparency, and Efficiency in Algorithmic Design”

- USC PhD REACH Program 2020, virtual presentation to prospective domestic PhD students attending Historically Black Colleges and Universities as well as Hispanic Serving Institutions (Nov. 2020)

“How Can Artificial Intelligence Mitigate Homelessness”

- Los Angeles Unified School District (LAUSD) Computer Science Zoom Series (Sept. 2020) ~150 middle and high school students of LAUSD’s Linked Learning Pathway

“Assisting Vulnerable Communities through Artificial Intelligence and Operations Research”

- 2020 IISE Western Regional Conference, The New Age of Analytics (Feb. 2020)

“Assisting Vulnerable Communities through Artificial Intelligence & Operations Research”

- Santa Monica Rotary Club (Jan. 2020)

“AI and Operations Research for Mitigating Homelessness”

- Open Data Science Conference (ODSC) West, San Francisco, CA (Nov. 2019)

“Housing Allocation for Homeless Persons: Fairness, Transparency, and Efficiency in Algorithmic Design”

- AIRES Conference: An Ex-Ante Approach on Ethics in Artificial Intelligence, hosted by the AI Robotic Ethics Society, a UCLA organization on a mission to ensure artificial intelligence is designed ethically and responsibly, Los Angeles, CA (Jun. 2019)

“Introduction to the Center for AI in Society”

- USC STEM Spotlight for high school students from the STEM Academy of Hollywood, Los Angeles, CA (Mar. 2019)

“Assisting Low Resource Communities via Data-Driven Optimization”

- USC WiSE Research Horizons Symposium, Los Angeles, CA (Mar. 2019)

Panel on “Fairness, Accountability, and Transparency”

- AI LA Meet-up on “AI and Society: Creating a Fair and Ethical Future,” Innovate Pasadena Connect Week, Pasadena, CA (Oct. 2018)

Talk: “Fairness, Accountability, and Transparency in AI for Allocating Housing to the Homeless”

- AI LA Meet-up on “AI and Society: Creating a Fair and Ethical Future,” Innovate Pasadena Connect Week, Pasadena, CA (Oct. 2018)

“Data-Driven Decision-Making (D3M) Research Group”

- USC CSCI 697 Seminar in Computer Science Research; Introducing CS PhD students to the research in my group (Oct. 2018, Nov. 2019, Apr. 2021)

“Meet an Engineer Here! (Conozca una Ingeniera Aqui!)”

- 3rd Annual LAUSD Local District East Family College and Career Day fair, Los Angeles, CA (May 2018)

“AI for Social Good”

- USC CAIS Seminar Series 2017, University of Southern California, Los Angeles, CA (Sep. 2017)

“Improving Medical Decision-Making using Data, Math, and Computers”

- Mirman School Women in STEAM Conference 2017, Los Angeles, CA (invited talk, Mar. 2017)

“Data-driven decision-making in healthcare”

- USC Bridge Faculty Luncheon Seminar (invited talk), Los Angeles, CA (Mar. 2017)

“Engineering better decisions in healthcare”

- USC WiSE STEM Bytes Seminar (invited talk), Los Angeles, CA (Nov. 2016)

LANGUAGES

Greek (mother tongue), French (native), English (fluent), Spanish (intermediate) and German (basic)

COMPUTER SKILLS

- Programming languages: C++, C#, VBA
- Scientific computing/Analytics: MATLAB, R, RStudio
- Mathematical modeling: IBM CPLEX, GUROBI, MOSEK, Yalmip

REFERENCES

References available on request.