Bistra Dilkina, Ph.D.

Dr. Allen and Charlotte Ginsburg Early Career Chair in Computer Science
Associate Professor of Computer Science and Industrial & Systems Engineering Viterbi School of Engineering
co-Director, USC Center for AI in Society (CAIS)
University of Southern California (USC)

CONTACT INFORMATION

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Los Angeles, CA 90089

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INTERESTS

Computational Sustainability; Artificial Intelligence: Search and Constraint Programming; Operations Research: Discrete Optimization

My research focuses on the integration of discrete optimization algorithms and machine learning for large-scale real-world planning and network design problems, with applications in wildlife conservation, resilient infrastructure planning, health interventions, and more broadly in applications for environmental sustainability and social good.

APPOINTMENTS

co-Director, USC Center for AI in Society 2020-
Associate Professor, Computer Science, University of Southern California 2020-

Associate Director, USC Center for AI in Society 2018-2020
Assistant Professor, Computer Science, University of Southern California 2018-2020
Assistant Professor, College of Computing, Georgia Tech 2013-2017
Postdoctoral Researcher, Institute for Computational Sustainability, Cornell, 2012-2013
Ph.D. Research Intern, IBM Research T.J. Watson, 2009-2010
Staff Senior Research, Actenum Corporation, 2004-2006
COOP/Intern, Constraint Works Inc. 2002

EDUCATION

Ph.D. in Computer Science, Cornell University, Jan. 2012
M.Sc. in Computer Science, Cornell University, Jan. 2009
BSc in Computer Science, Simon Fraser University, May 2004

AWARDS & ACCOMPLISHMENTS

Dr. Allen and Charlotte Ginsburg Early Career Chair in Computer Science **2022**
Qualcomm Academic Lecture Award **2021**
IEEE Geoscience and Remote Sensing Society Data Fusion *Contest Winner* **2020**
Best Application System demo award, AAMAS Conference **2019**
Best paper award, AAMAS Workshop on Optimization in Multiagent Systems **2019**
Okawa Foundation *Research Award* **2019**
Certificate of Appreciation from the SMART Consortium **2018**
Certificate of Appreciation from the AAAI Association for the Advancement of Artificial Intelligence **2018**
UN Data for Climate Action *Challenge Award* in Climate Adaptation **2017**
First Prize, *Poster Competition*, INFORMS Annual Meeting **2017**
Georgia Tech Edenfield *Faculty Fellowship* Award **2017**
LexisNexis Dean's *Excellence Award* in the College of Computing **2017**
KDD *Best Student Paper* Award Runner-up (Applied Data Science) **2016**
Fellow at the Brook Byers Institute for Sustainable Systems **2015**
Lockheed Inspirational Young *Faculty Award* **2015**
Raytheon *Faculty Fellowship* **2015**
Georgia Power Professor of *Excellence Award* **2014**

Recipient of *"Thank-a-Teacher" Certificate* where students honor great teachers **2014**
Best paper award, NeurIPS Workshop on Frontiers of Network Analysis **2013**
Best paper award, ENRE Sessions in Forestry, INFORMS Annual Meeting **2011**
NSERC Postgraduate *Scholarship* **2008-2010**
Graduate *Teaching Assistant* Award, Computer Science, Cornell University **2008**
Nominated for *Best Paper* Award, AAAI: Conference on Artificial Intelligence **2007**
Google Anita Borg *Scholarship* **2007**
Dean of Applied Sciences *Convocation Medal*, Simon Fraser University **2004**
CRA Outstanding Undergraduate *Researcher Award* **2003**
Co-founder, Actenum Corp, Vancouver, BC, Canada **2004**
B.C. Sugar *Achievement Award* **2003**
International Gordon M. Shrum *Scholarship* **1999-2004**
United World College *Scholarship* **1997-1999**

Publications

Authorship for papers is determined based on students and postdocs first (by contribution), followed by faculty (by contribution) unless otherwise noted.

Books, Edited Books

[1] F. Fang, M. Tambe, **B. Dilkina**, A. Plumptre. Artificial Intelligence and Conservation (Part of the "AI and Social Good" book series). *Cambridge University Press*, 2019.

Rigorously refereed conference papers

[2] W. Chen, E. P. Sivaramakrishnan, and **B. Dilkina**. Landscape Optimization for Prescribed Burns in Wildfire Mitigation Planning. *ACM SIGCAS/SIGCHI Conference on Computing and Sustainable Societies (COMPASS)*, 2022.

[3] A. Ferber, J. Song, **B. Dilkina**, Y. Yue. Learning Pseudo-Backdoors for Mixed Integer Programs. *Intl. Conference on Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems (CPAIOR)*, 2022.

[4] S. Zhang, J. Li, T. Huang, S. Koenig and **B. Dilkina**. Learning a Priority Ordering for Prioritized Planning in Multi-Agent Path Finding. *International Symposium on Combinatorial Search (SOCS)*, 2022.

[5] T. Huang, J. Li, S. Koenig, **B. Dilkina**. Anytime Multi-Agent Path Finding via Machine Learning-Guided Large Neighborhood Search. *AAAI Conference on Artificial Intelligence (AAAI)*, 2022.

[6] E. Khalil, P. Vaezipoor, **B. Dilkina**. Finding Backdoors to Integer Programs: A Monte Carlo Tree Search Framework. *AAAI Conference on Artificial Intelligence (AAAI)*, 2022.

[7] M. Kshirsagar, C. Robinson, S. Yang, S. Gholami, I. Klyuzhin, S. Mukherjee, Md Nasir, A. Ortiz, F. Oviedo Perhavec, D. Tanner, A. Trivedi, Y. Xu, M. Zhong, **B. Dilkina**, R. Dodhia, J. Lavista Ferres. Becoming Good at AI for Good.*AAAI/ACM Conference on AI, Ethics, and Society (AIES)*, 2021.

[8] T. Huang, **B. Dilkina**, S. Koenig. Learning Node-Selection Strategies in Bounded-Suboptimal Conflict-Based Search for Multi-Agent Path Finding. *International Conference on Autonomous Agents and Multi-Agent Systems (AAMAS)*, 2021.

[9] T. Huang, **B. Dilkina**, S. Koenig. Learning to Resolve Conflicts for Multi-Agent Path Finding with Conflict-Based Search. *AAAI Conference on Artificial Intelligence (AAAI)*, 2021.

[10] U. Gupta, A. Ferber, **B. Dilkina**, G. Ver Steeg. Controllable Guarantees for Fair Outcomes via Contrastive Information Estimation. *AAAI Conference on Artificial Intelligence (AAAI)*, 2021.

[11] J. Song, R. Lanka, Y. Yue, **B. Dilkina**. A General Large Neighborhood Search Framework for Solving Integer Programs. *Conference on Neural Information Processing Systems (NeurIPS)*, 2020.

[12] P. Devulapalli, **B. Dilkina**, and Y. Xue. Embedding Conjugate Gradient in Learning Random Walks for Landscape Connectivity Modeling in Conservation. *International Joint Conference on Artificial Intelligence (IJCAI)*, 2020.

[13] T. Huang and **B. Dilkina**. Enhancing Seismic Resilience of Water Pipe Networks. *ACM SIGCAS Conference on Computing and Sustainable Societies (COMPASS)*, 2020.

[14] E. Bondi, R. Jain, P. Aggrawal, S. Anand, R. Hannaford, A. Kapoor, D. Dey, J. Piavis, S. Shah, L. Joppa, **B. Dilkina**, M. Tambe. BIRDSAI: A Dataset for Detection and Tracking in Aerial Thermal Infrared Videos. *IEEE Winter Conference on Applications of Computer Vision (WACV)*, 2020.

[15] L. Xu, S. Gholami, S. Mc Carthy, **B. Dilkina**, A. Plumptre, M. Tambe, R. Singh, et. al. Stay Ahead of Poachers: Illegal Wildlife Poaching Prediction and Patrol Planning Under Uncertainty with Field Test Evaluations. *IEEE International Conference on Data Engineering (ICDE)*, 2020 (short paper).

[16] C. Robinson, A. Ortiz, K. Malkin, B. Elias, A. Peng, D. Morris, **B. Dilkina**, N Jojic. Human-Machine Collaboration for Fast Land Cover Mapping, *AAAI Conference on Artificial Intelligence (AAAI)*, 2020. (acceptance rate 1,591 / 7,737 = 20.6%)

[17] A. Ferber, B. Wilder, **B. Dilkina**, and M. Tambe. MIPaaL: Mixed integer program as a layer. *AAAI Conference on Artificial Intelligence (AAAI)*, 2020. (acceptance rate 1,591 / 7,737 = 20.6%)

[18] A. Perrault, B. Wilder, E. Ewing, A. Mate, **B. Dilkina**, M. Tambe. End-to-End Game-Focused Learning of Adversary Behavior in Security Games. *AAAI Conference on Artificial Intelligence (AAAI)*, 2020. (acceptance rate 1,591 / 7,737 = 20.6%)

[19] E. Bondi, H. Oh, H. Xu, F. Fang, **B. Dilkina**, M. Tambe. To Signal or Not To Signal: Exploiting Uncertain Real-Time Information in Signaling Games for Security and Sustainability. *AAAI Conference on Artificial Intelligence (AAAI)*, 2020. (acceptance rate 1,591 / 7,737 = 20.6%)

[20] B. Wilder, E. Ewing, **B. Dilkina**, M. Tambe. End to end learning and optimization on graphs. *Conference on Neural Information Processing Systems (NeurIPS)*, 2019. (acceptance rate 1428/6743 = 21.1%)

[21] A. Gupta, **B. Dilkina**. Budget-Constrained Demand-Weighted Network Design for Resilient Infrastructure. *IEEE International Conference on Tools with Artificial Intelligence (ICTAI)*, 2019.

[22] J. A. Killian, B. Wilder, A. Sharma, V. Choudhary, **B. Dilkina**, and M. Tambe. Learning to prescribe interventions for tuberculosis patients using digital adherence data. *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)*, 2019. (acceptance rate 170/1200 = 14.2%)

[23] E.B. Khalil, A Gupta, **B. Dilkina**. Combinatorial Attacks on Binarized Neural Networks. *International Conference on Learning Representations (ICLR)*, 2019. (acceptance rate 500/1591 = 31.4%)

[24] C. Robinson, N. Jojic, L. Hou, K. Malkin, **B. Dilkina**, R. Soobitskym, J. Czawlytko. Large Scale High-Resolution Land Cover Mapping with Multi-Resolution Data. *Conference on Computer Vision and Pattern Recognition (CVPR)*, 2019. [Jojic, MSR senior researcher](acceptance rate 1300/5160 = 25.2%)

[25] S. Gholami, A. Yadav, L. Tran-Thanh, **B. Dilkina**, M. Tambe. Don't Put All Your Strategies in One Basket: Playing Green Security Games with Imperfect Prior Knowledge. *International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, 2019. (acceptance rate ≈ 24%)

[26] B. Wilder, **B. Dilkina**, M. Tambe. Melding the Data-Decisions Pipeline: Decision-Focused Learning for Combinatorial Optimization. *AAAI Conference on Artificial Intelligence (AAAI)*, 2019. (acceptance rate 1150/7095 = 16.2%)

[27] P. Siyari, **B. Dilkina**, C. Dovrolis. Evolution of Hierarchical Structure & Reuse in iGEM Synthetic DNA Sequences. *International Conference on Computational Science*, 2019.

[28] A. Gupta, M. Farajtabar, **B. Dilkina**, H. Zha. Discrete Interventions in Hawkes Processes with Applications in Invasive Species Management. *International Joint Conference on Artificial Intelligence (IJCAI)*, 2018. (acceptance rate 710/3470 = 20.5%)

[29] S. Gholami, S. McCarthy, **B. Dilkina**, A. Plumptre, M. Tambe, M. Driciru, et al. Adversary models account for imperfect crime data: Forecasting and planning against real-world poachers. *International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, 2018. (acceptance rate 151/597 = 25.3%)

[30] H. Ou, M. Tambe, **B. Dilkina**, P. Vayanos. Imbalanced Collusive Security Games. *Conference on Decision and Game Theory for Security (GameSec)*, 2018.

[31] A. Gupta, C. Robinson, **B. Dilkina**. Infrastructure Resilience for Climate Adaptation. *ACM SIGCAS Conference on Computing and Sustainable Societies (COMPASS)*, 2018. (acceptance rate 24/70 = 34.3%)

[32] E. Bondi, D. Dey, A. Kapoor, J. Piavis, S. Shah, F. Fang, **B. Dilkina**, R. Hannaford, A. Iyer, L. Joppa, M. Tambe. AirSim-W: A Simulation Environment for Wildlife Conservation with UAVs. *ACM SIGCAS Conference on Computing and Sustainable Societies (COMPASS)*, 2018. [Kapoor, MSR senior researcher] (acceptance rate 24/70 = 34.3%)

[33] C. Robinson, **B. Dilkina**. A Machine Learning Approach to Modeling Human Migration. *ACM SIGCAS Conference on Computing and Sustainable Societies (COMPASS)*, 2018. (acceptance rate 24/70 = 34.3%)

[34] H. Dai, E. B. Khalil, Y. Zhang, **B. Dilkina**, L. Song. Learning Combinatorial Optimization Algorithms over Graphs. *Conference on Neural Information Processing Systems (NeurIPS)*, 2017. (acceptance rate 679/3,240 = 21%) Spotlight presentation, top 5% of submissions.

[35] E. B. Khalil, **B. Dilkina**, G. L. Nemhauser, S. Ahmed, and Y. Shao. Learning to Run Heuristics in Tree Search. *International Joint Conference on Artificial Intelligence (IJCAI)*, 2017. (acceptance rate 660/2540 = 26%).

[36] H. Xu, B. Ford, F. Fang, **B. Dilkina**, A. Plumptre, M. Tambe, M. Driciru et al. Optimal patrol planning for green security games with black-box attackers. *International Conference on Decision and Game Theory for Security (GameSec)*, 2017. (acceptance rate 29/71 = 40.8%)

[37] I. Fountalis, C. Dovrolis, **B. Dilkina**, S. D. Keilholz. δ-MAPS: From fMRI Data to Functional Brain Networks. *Complex Networks*, 2017.

[38] A. Afshar, J. C. Ho, **B. Dilkina**, I. Perros, E. B. Khalil*, L. Xiong, and V. Sunderam. CP-ORTHO: An Orthogonal Tensor Factorization Framework for Spatio-Temporal Data. *ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (SIGSPATIAL)*, 2017. (acceptance rate 39/193 = 20%)

[39] Y. Xue, X. Wu, D. Morin, **B. Dilkina**, A. Fuller, J.A. Royle, C.P. Gomes. Dynamic Optimization of Landscape Connectivity Embedding Spatial-Capture-Recapture Information *AAAI Conference on Artificial Intelligence (AAAI)*, Feb. 2017. (acceptance rate 638/2590 = 24.6%)

[40] I. Fountalis, C. Dovrolis, **B. Dilkina**, and S. Keilholz. δ-MAPS: From fMRI Data to Functional Brain Networks. *6th International Conference on Complex Networks and Their Applications* (pp. 1237-1249). Springer, 2017.

[41] E. B. Khalil, P. Le Bodic, L. Song, G. L. Nemhauser, and **B. Dilkina**. Learning to Branch in Mixed Integer Programming. *AAAI Conference on Artificial Intelligence (AAAI)*, Feb. 2016. [out of order, Dilkina lead faculty author] (acceptance rate 549/2132 = 25.8%)

[42] A. Jain, C. Robinson, **B. Dilkina**, R.M. Fujimoto. An Approach to Integrate Inter-Dependent Simulation Using HLA with Applications to Sustainable Urban Development *Winter Simulation Conference (WSC)*, Dec. 2016

[43] M. Madaio, S.-T. Chen, O. Haimson, W. Zhang, X. Cheng, M. Hinds-Aldrich, D.H. Chau, **B. Dilkina**. Firebird: Predicting Fire Risk and Prioritizing Fire Inspections in Atlanta. *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)*, 2016. (acceptance rate 142/1115=13.7%, oral presentation 8.6%) Best Paper Runner Up Award (Applied Data Science Track)

[44] P. Siyari, **B. Dilkina**, C. Dovrolis. Lexis: An Optimization Framework for Discovering the Hierarchical Structure of Sequential Data. *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)*, 2016. (acceptance rate 142/1115=13.7%, oral presentation 8.6%)

[45] S. Safarzadegan Gilan, N. Goyal, **B. Dilkina**. Active Learning in Multi-objective Evolutionary Algorithms for Sustainable Building Design. *Genetic and Evolutionary Computation Conference (GECCO)*, 2016. Nominated for Best Paper Award

[46] S. Ermon, Y. Xue, R. Toth, **B. Dilkina**, R. Bernstein, T. Damoulas, and C. P. Gomes. Learning Large-Scale Dynamic Discrete Choice Models of Spatio-Temporal Preferences with Application to Migratory Pastoralism in East Africa. *AAAI Conference on Artificial Intelligence (AAAI)*, 2015. (26.67%)

[47] E. B. Khalil, **B. Dilkina**, and L. Song. Scalable diffusion-aware optimization of network topology. *ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)*, 2014. (14.57%)

[48] J. Choo, D. Lee, **B. Dilkina**, H. Zhaand H. Park. To Gather Together for a Better World: Understanding and Leveraging Communities in Micro-lending Recommendation. *International World Wide Web Conference (WWW)*, 2014. (13%)

[49] Y. Xue, **B. Dilkina**, T. Damoulas, D. Fink, C. P. Gomes and S. Kelling. Improving Your Chances: Boosting Citizen Science Discovery. *AAAI Conference on Human Computation and Crowd Sourcing (HCOMP)*, 2013. (30%)

[50] R. Le Bras, **B. Dilkina**, Y. Xue, C. P. Gomes, K. S. McKelvey, C. Montgomery, and M. K. Schwartz. Robust Network Design for Multispecies Conservation. *AAAI Conference on Artificial Intelligence (AAAI)*, 2013. (29%)

[51] **B. Dilkina**, K. Lai, R. Le Bras, Y. Xue, C. P. Gomes, A. Sabharwal, J. Suter, K. S. McKelvey, M. K. Schwartz and C. Montgomery. Large Landscape Conservation - Synthetic and Real-World Datasets. *AAAI Conference on Artificial Intelligence (AAAI)*, 2013. (29%)

[52] D. H. Fisher, **B. Dilkina**, E. Eaton, C. P. Gomes. Incorporating Computational Sustainability into AI Education through a Freely-Available, Collectively-Composed Supplementary Lab Text. *AAAI Symposium on Educational Advances in Artificial Intelligence (EAAI)*, 2012.

[53] **B. Dilkina**, K. Lai, C. P. Gomes. Upgrading Shortest Paths in Networks. *Intl. Conference on Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problem (CPAIOR)*, 2011.

[54] K. Ahmadizadeh, **B. Dilkina**, C. P. Gomes, A. Sabharwal. An Empirical Study of Optimization for Maximizing Diffusion in Networks. *Intl. Conference on Principles and Practice of Constraint Programming (CP)*, 2010. (36%)

[55] D. Sheldon, **B. Dilkina**, A. Elmachtoub, R. Finseth, A. Sabharwal, J. Conrad, C. P. Gomes, D. Shmoys, W. Allen, O. Amundsen, B. Vaughan. Maximizing Spread of Cascades Using Network Design. *Conference on Uncertainty in Artificial Intelligence (UAI)*, 2010 (34%)

[56] **B. Dilkina**, C. P. Gomes. Solving Connected Subgraph Problems in Wildlife Conservation. *Intl. Conference on Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems (CPAIOR)*, 2010.

[57] **B. Dilkina**, C. P. Gomes. Backdoors in the Context of Learning. *Intl. Conference on Theory and Applications of Satisfiability Testing (SAT)*, 2009. (37.5%)

[58] **B. Dilkina**, C. P. Gomes, Y. Malitsky, A. Sabharwal, M. Sellmann. Backdoors to Combinatorial Optimization: Feasibility and Optimality. *Intl. Conference on Integration of AI and OR Techniques in Constraint Programming for Combinatorial Optimization Problems (CPAIOR)*, 2009.

[59] **B. Dilkina**, C. P. Gomes, and A. Sabharwal. Tradeoffs in the Complexity of Backdoor Detection. *Intl. Conference on Principles and Practice of Constraint Programming (CP)*, 2007. (30.1%)

[60] **B. Dilkina**, C. P. Gomes, A. Sabharwal. The Impact of Network Topology on Pure Nash Equilibria in Graphical Games. *AAAI Conference on Artificial Intelligence (AAAI)*, 2007. (27%) Nominated for Best Paper Award

[61] **B. Dilkina**, L. Duan and W. S. Havens. Extending Systematic Local Search for Job Shop Scheduling Problems. *Intl. Conference on Principles and Practice of Constraint Programming (CP)*, 2005. (29.3%)

[62] **B. Dilkina**, and W. S. Havens. Scheduling the National Football League Season. *Innovative Applications in Artificial Intelligence (IAAI)*, 2004.

[63] W. S. Havens and **B. Dilkina**. A Hybrid Schema for Systematic Local Search. *Canadian Conference on Artificial Intelligence (AI)*, 2004.

Refereed Journal Articles

[64] P. R. Armsworth, **B. Dilkina**, J. Fargione, M. Fisher, R. Fovargue, J. Harris, H. B. Jackson, D. Le Bouille, C. Nolte, C. Richards. Multiplying the impact of biodiversity conservation funding using spatial exchange rates. *Frontiers in Ecology and the Environment*, 2022 (accepted). [alphabetical order] (Impact Factor: 13.79)

[65] B. Keskin, E. C. Griffin, J. O. Prell, **B. Dilkina**, A. Ferber, J. MacDonald, R. Hilend, S. Griffis, M. L. Gore. Quantitative Investigation of Wildlife Trafficking Supply Chains: A Review. *Omega*, Oct. 2022, https://doi.org/10.1016/j.omega.2022.102780 (Impact Factor: 8.67)

[66] S. Negriff*, **B. Dilkina***, L. Matai, E. Rice. Using machine learning to determine the shared and unique risk factors for marijuana use among child-welfare versus community adolescents. *PLOS ONE*, Sept. 2022, https://doi.org/10.1371/journal.pone.0274998 [* co-first authors] (Impact Factor: 3.75)

[67] Pynadath, D., **Dilkina, B.**, Jeong, D., John, R., Marsella, S., Merchant, C., Miller, L., Read, S. Disaster world: Decision-theoretic agents for simulating population responses to hurricanes. *Computational and Mathematical Organization Theory*. May 2022. DOI: 10.1007/s10588-022-09359-y. (Impact Factor: 2.0)

[68] Lee, B. P., Roth, N., Rao, P., Im, G. Y., Vogel, A. S., Hasbun, J., Roth, Y., Shenoy, A., Arvelakis, A., Ford, L., Dawe, I., Schiano, T. D., Davis, J. P., Rice, J. P., Eswaran, S., Weinberg, E., Han, H., Hsu, C., Fix, O. K., Maddur, H., Ghobrial, R. M., Therapondos, G., **Dilkina*, B.**, Terrault*, N. A. Artificial intelligence to identify harmful alcohol use after early liver transplant for alcohol-associated hepatitis. *American Journal of Transplantation*, Apr. 2022. doi:10.1111/ajt.17059 (Impact Factor: 9.4) [* corresponding authors]

[69] Davis, J.P., Rao, P., Dilkina, B., Prindle, J., Eddie, D., Christie, N.C., DiGuiseppi, G., Saba, S., Ring, C., Dennis, M.. Identifying individual and environmental predictors of opioid and psychostimulant use among adolescents and young adults following outpatient treatment. *Drug and Alcohol Dependence*, 2022. (Impact Factor: 3.35)

[70] B. Shipley, R. Bach, Y. Do, H. Strathearn, J. McGuire, **B. Dilkina**. *megaSDM*: integrating dispersal and time-step analyses into species distribution models. *Ecography*, Jan. 2022. DOI: 10.1111/ecog.0545 (Impact Factor: 5.9)

[71] Y. Yang, N. Boland, **B. Dilkina**, M. Savelsbergh. Learning generalized strong branching for set covering, set packing and 0-1 knapsack problems. *European Journal of Operational Research* (EJOR), 2021. DOI: 10.1016/j.ejor.2021.11.050 (Impact Factor: 5.3)

[72] M. Khalkhali, **B. Dilkina**, W. Mo. The role of climate change and decentralization in urban water services: A dynamic energy-water nexus analysis. *Water Research*, Vol. 207, 2021. DOI: 10.1016/j.watres.2021.117830. (Impact Factor: 11.24)

[73] P. Armsworth, A. Benefield, **B. Dilkina**, R. Fovargue, H. Jackson, D. Le Bouille, C. Nolte. Allocating resources for land protection using continuous optimization: biodiversity conservation in the United States. *Ecological Applications*, May 2020. (Impact Factor: 4.34) [alphabetical order]

[74] C. Robinson, **B. Dilkina**, J. Moreno-Cruz. Modeling migration patterns in the USA under sea level rise. *PLOS ONE*, 15(1), 2020. (Impact Factor: 3.24)

[75] J.K. Costanza, J. Watling, R. Sutherland, C. Belyea, **B. Dilkina**, H. Cayton, D. Bucklin, S.S. Romañach, N.M. Haddad. Preserving connectivity under climate and land-use change: No one-size-fits-all approach for focal species in similar habitats. *Biological Conservation*, Vol. 248, 2020. (Impact Factor: 4.71)

[76] C. Gomes, T. Dietterich, C. Barrett, J. Conrad, **B. Dilkina**, et. al. Computational Sustainability: Computing for a Better World and a Sustainable Future. *Communications of the ACM*, 62(9), 56-65, 2019. (Impact Factor: 4.03)

[77] Z. Lu, W. Mo, **B. Dilkina**, K. Gardner, S. Stang, J. Huang, M. C. Foreman. Decentralized Water Collection Systems for Households and Communities: Household Preferences in Atlanta and Boston. *Water Research (Elsevier Journal)*, 2019. (Impact Factor: 7.91)

[78] A. Gupta, D. Morin, **B. Dilkina**, A. Fuller, A. Royle, S. Sutherlandand C. P. Gomes. Reserve Design Optimizing Functional Connectivity and Animal Density. *Conservation Biology*, 2019. (Impact Factor: 5.89)

[79] I. Fountalis, C. Dovrolis, A. Bracco, **B. Dilkina**, and S. Keilholz. δ-MAPS: from spatio-temporal data to a weighted and lagged network between functional domains. *Applied Network Science*, 3(1), p.21, 2018.

[80] W. Zhang, C. Robinson, S. Guhathakurta, V. M. Garikapati, **B. Dilkina**, M. A. Brown, and R. M. Pendyala. Estimating residential energy consumption in metropolitan areas: A microsimulation approach. *Energy*, Elsivier, 155, 162-173, 2018. (Impact Factor: 3.71)

[81] W. Mo, Z. Lu, **B. Dilkina**, K. H. Gardner, J. C. Huang, and M. C. Foreman. Sustainable and Resilient Design of Interdependent Water and Energy Systems: A Conceptual Modeling Framework for Tackling Complexities at the Infrastructure-Human-Resource Nexus. *Sustainability*, 10(6), 1-10, 2018. (Impact Factor: 2.07)

[82] C. Robinson, **B. Dilkina**, J. Hubbs, W. Zhang, S. Guhathakurta, M. A. Brown, and R.M. Pendyala. Machine learning approaches for estimating commercial building energy consumption. *Applied Energy*, 208, 889-904, 2017. (Impact Factor: 7.9)

[83] V. M. Garikapati, D. You, W. Zhang, R. M. Pendyala, S. Guhathakurta, M. A. Brown, and **B. Dilkina**. Estimating Household Travel Energy Consumption in Conjunction with a Travel Demand Forecasting Model. *Transportation Research Record: Journal of the Transportation Research Board* Vol. 2668-01, pp. 1-10, 2017.

[84] N. Jafari, B.L. Nuse, C.T. Moore, **B. Dilkina**, J. Hepinstall-Cymerman. Achieving full connectivity of sites in the multiperiod reserve network design problem. *Computers & Operations Research*, Volume 81, Pages 119-127, May 2017. (Impact Factor: 2.96)

[85] **B. Dilkina**, R. Houtman, C. P. Gomes, C.A. Montgomery, K.S. McKelvey, K. Kendall, T.A. Graves, R. Bernstein, and M.K. Schwartz. Trade-offs and efficiencies in optimal budget-constrained multispecies corridor networks. *Conservation Biology*, 31(1): 192—202, 2017. (Impact Factor: 5.89)

[86] M. Ilbeigi, **B. Dilkina**. Statistical Approach to Quantifying the Destructive Impact of Natural Disasters on Petroleum Infrastructures. *Journal of Management in Engineering*, 34(1), 2017.

[87] D. Luo, H. Xu, Y. Zhen, **B. Dilkina**, H. Zha, H., X. Yang, W. Zhang. Learning Mixtures of Markov Chains from Aggregate Data with Structural Constraints. *IEEE Transactions on Knowledge and Data Engineering (TKDE)*, 2016. (Impact Factor: 2.77)

[88] **B. Dilkina**, C. P. Gomes, and A. Sabharwal. Tradeoffs in the complexity of backdoors to satisfiability: dynamic sub-solvers and learning during search. *Annals of Mathematics and Artificial Intelligence*, 2014. (Impact Factor: 1.01)

Book Chapters

[89] P. Siyari, **B. Dilkina**, C. Dovrolis. Emergence and Evolution of Hierarchical Structure in Complex Systems. In *Dynamics of and on complex networks*. Springer, 2019 (refereed).

[90] H. Xu, B. Ford, F. Fang, **B. Dilkina**, A. J. Plumptre, M. Tambe, M. Driciru et al. Optimal Patrol Planning Against Black-Box Attackers. In *Artificial Intelligence and Conservation*, edited by F. Fang, M. Tambe, B. Dilkina, A. Plumptre, Cambridge University Press, 2019.

Refereed Conference Extended Abstracts & Demos

[91] A. Ferber, J. Song, B. Dilkina, Y. Yue. Learning Pseudo-Backdoors for Mixed Integer Programs. *International Symposium on Combinatorial Search (SOCS)*, 2021.

[92] C. Robinson, L. Hou, K. Malkin, R. Soobitskym, J. Czawlytko, **B. Dilkina**, N. Jojic. Human-in-the-loop framework for land cover prediction Presenters (Demo). *Conference on Computer Vision and Pattern Recognition (CVPR)*, 2019. [Jojic, MSR senior researcher]

[93] E. Bondi, H. Oh, F. Fang, H. Xu, **B. Dilkina**, M. Tambe. Using Game Theory in Real Time in the Real World: A Conservation Case Study (Demo). *AAMAS*, 2019. (Best application system demo award)

[94] E. Bondi, H. Oh, H. Xu, F. Fang, **B. Dilkina**, M. Tambe. Broken Signals in Security Games: Coordinating Mobile Patrollers and Sensors in the Real World (Extended Abstract). *AAMAS*, 2019.

Refereed Workshop Papers

[95] Weizhe Chen, Zhihan Wang, Jiaoyang Li, Sven Koenig, Bistra Dilkina. No Panacea in Planning: Algorithm Selection for Multi-agent Path Finding. AAAI-23 Workshop on Multi-Agent Path Finding, 2023

[96] Taoan Huang, Vikas Shivashankar, Michael Caldara, Joseph Durham, Jiaoyang Li, Bistra Dilkina, Sven Koenig. Deadline-Aware Multi-Agent Tour Planning. 2nd International Workshop on Heuristic Search in Industry in conjunction with IJCAI-ECAI, 2022. AAAI-23 Workshop on Multi-Agent Path Finding, 2023

[97] Aaron Ferber, Emily Grifin, Bistra Dilkina, Burcu Keskin and Meredith Gore. Predicting Wildlife Trafficking Routes with Differentiable Shortest Paths. AAAI Workshop on AI for Social Good, 2023

[98] G. Qiu, A. Gupta, C. Robinson, S. Fengand **B. Dilkina**. Learning-Based Travel Prediction in Urban Road Network Resilience Optimization. *AAAI Workshop on AI for Urban Mobility*, 2021.

[99] K. Wang, B. Wilder, S-C. Suen, **B. Dilkina**, M. Tambe. Improving GP-UCB Algorithm by Harnessing Decomposed Feedback. *4th ECML PKDD Workshop on Data Science for Social Good*, 2019.

[100] B. Wilder, **B. Dilkina**, M. Tambe. End to end learning and optimization on graphs. *ICML Workshop on Learning and Reasoning with Graph-Structured Representations*, 2019.

[101] E. Bondi, H. Oh, H. Xu, F. Fang, **B. Dilkina**, M. Tambe. Wildlife GUARDSS: Using Uncertain Real-Time Information in Signaling Games for Sustainability. *ICML Workshop on AI for Social Good*, 2019.

[102] B. Wilder, J. Killian, A. Sharma, V. Choudhary, **B. Dilkina**, M. Tambe. Integrating optimization and learning to prescribe interventions for tuberculosis patients. *10th International Workshop on Optimization in Multiagent Systems (OptMAS) at AAMAS*, 2019. (Best paper award)

[103] C. Robinson, F. Hohman, **B. Dilkina**. A Deep Learning Approach for Population Estimation From Satellite Imagery. *1st ACM SIGSPATIAL Workshop on Geospatial Humanities* (pp. 47-54). ACM, 2017.

[104] C. Robinson, A. Shirazi, M. Liu, and **B. Dilkina**. Network Optimization of Food Flows in the US. *International Workshop on Big Data for Sustainable Development at the IEEE International Conference on Big Data*, 2016.

[105] U. Ahsan, O. Sopova, W. Stayton, **B. Dilkina**. Interactive tool to prioritize housing options for refugee resettlement. *Bloomberg Data for Good Exchange*, Sept. 2016.

[106] J. Belknap, C. Foster, S. Moningi, A. Beasley, A. Giarrusso, **B. Dilkina**. Helping to Preserve Atlanta's Urban Tree Canopy. *Bloomberg Data for Good Exchange*, Sept. 2015.

[107] M. Madaio, O. Haimson, W. Zhang, X. Cheng, M. Hinds Aldrich, **B. Dilkina**, D.H. Chau. Identifying and Prioritizing Fire Inspections: A Case Study of Predicting Fire Risk in Atlanta. *Bloomberg Data for Good Exchange*, Sept. 2015.

[108] **B. Dilkina**. Protecting landscape connectivity for species persistence in the face of urbanization and climate change. *International Workshop to Explore Research Frontiers through US Engagement in the Lower Mekong Basin (US/LMB)*, organized by NSF, 2015.

[109] E. B. Khalil, **B. Dilkina**, and L. Song. Learning-to-Branch in Mixed Integer Programming. *Mixed Integer Programming Workshop*. June 2015.

[110] **B. Dilkina**. Optimization Approaches for Pedestrian Connectivity. *NSF Early-Career Investigators Workshop on CPS and Smart City (includes a stipend award of $1,500)*, Apr. 2015.

[111] S. Safarzadegan Gilan and **B. Dilkina**. Sustainable Building Design: A Challenge at the Intersection of Machine Learning and Design Optimization. *AAAI Workshop on Computational Sustainability*. Jan. 2015.

[112] N. Jain and **B. Dilkina**. Coarse models for bird migrations using clustering and non-stationary Markov chains. *AAAI Workshop on Computational Sustainability*. Jan. 2015.

[113] E. B. Khalil, **B. Dilkina**, and L. Song. CuttingEdge: Influence minimization in networks. *NIPS Workshop: Frontiers of Network Analysis: Methods, Models, and Applications*, 2013. (Best student paper award)

[114] **B. Dilkina**, T. Damoulas, C. P. Gomes, D.Fink. AL2: Learning for Active Learning. *NIPS Workshop: Machine Learning for Sustainability*, 2011.

[115] A. E. Kirkpatrick, **B. Dilkina**, and W. S. Havens. A Framework for Designing and Evaluating Mixed-Initiative Optimization Systems. *Workshop on Mixed-Initiative and Planning at ICAPS*, 2005.

Non-refereed Publications

[116] **B. Dilkina**, E. B. Khalil, and G. L. Nemhauser. Comments on: On learning and branching: a survey. *TOP: An Official Journal of the Spanish Society of Statistics and Operations Research*, vol. 25, issue 2, 242-246, 1–5. 2017.

[117] U. Ahsan, O. Sopova, W. Stayton, and **B. Dilkina**(summer intern students). Refugee Resettlement Housing Scout. arXiv preprint arXiv:1609.09066, 2016.

[118] S.V. Albrecht, J.C. Beck, D.L. Buckeridge, A. Botea, C, Caragea, C.H. Chi, T. Damoulas, **B. Dilkina**, E. Eaton, P. Fazli and S. Ganzfried. Reports on the 2015 AAAI Workshop Series. *AI Magazine*, 2015.

Submitted Papers

Rigorously Refereed Conference Papers

[119] Aaron Ferber, Taoan Huang, Daochen Zha, Martin Schubert, Benoit Steiner, Bistra Dilkina, Yuandong Tian. SurCo: Learning Linear Surrogates for Combinatorial Nonlinear Optimization Problems. ICLR 2023

[120] Taoan Huang, Aaron Ferber, Yuandong Tian, Bistra Dilkina and Benoit Steiner. Local Branching Relaxation Heuristics in Large Neighborhood Search for Integer Linear Programs. CPAIOR 2023

[121] Aaron Ferber, Emily Griffin, Bistra Dilkina, Burcu Keskin and Meredith Gore. Predicting Wildlife Trafficking Routes with Differentiable Shortest Paths. CPAIOR 2023

[122] Taoan Huang, Vikas Shivashankar, Michael Caldara, Joseph Durham, Jiaoyang Li, Bistra Dilkina and Sven Koenig. Deadline-Aware Multi-Agent Tour Planning. ICAPS 2023

Refereed Journal Articles (with date of submission)

[123] Heidi J. Albers, Charlotte H. Chang, S. T. M. Dissanayake, Kate J. Helmstedt, Kailin Kroetz, Bistra Dilkina, Christoph Nolte, Leticia M. Ochoa-Ochoa, and Gwen Spencer. Planning for People Increases Conservation Benefits from Reserve Networks. (under review Nature Sustainability), 2021.

[124] M. L. Gore, E. Griffin, **B. Dilkina**, A. Ferber, S. E. Griffis, B. B. Keskin, J. R. Macdonald. Advancing interdisciplinary science for disrupting wildlife trafficking networks. (under submission PNAS), 2022.

[125] David Eddie, John Prindle, Paul Somodi, Isaac Gerstmann, Bistra Dilkina, Shaddy Saba, Graham Diguiseppi, Michael Dennis, Jordan Davis. Exploring predictors of substance use disorder treatment engagement: Converging evidence from two machine learning approaches. Psychological Medicine, 2022

Patents

[1] **US Patent 8554519**: Method for designing the layout of turbines in a windfarm. **B. Dilkina**, J. Kalagnanam, E. Novakovskaia. Assignee: IBM Corp. Granted Oct 8, 2013.

[2] **US Patent 7606776**: Flexible Constraint Propagation Engine for Combinatorial Optimization Problems. W. S. Havens and **B. Dilkina**. Assignee: Actenum Corp. Granted Oct 20, 2009.

Presentations

Keynote Addresses and Plenary Lectures

[1] *AI and OR for Environmental Sustainability.* Plenary talk at INFORMS International Conference, June 2022

[2] *Decision-focused learning: integrating downstream combinatorics in ML.* Keynote Tutorial at INFORMS Computing Society Conference, Jan. 2022

[3] *Graph Representation Learning for Optimization on Graphs.* NeurIPS Workshop on Graph Representation Learning, Dec. 2019

[4] *Machine Learning and Optimization with Applications in Sustainability*
25th International Conference on Principles and Practice of Constraint Programming (CP), Oct. 2019

[5] *Artificial Intelligence for Wildlife Conservation*
The 18th Symposium on Systems Analysis in Forest Resources, Keynote, Mar. 2019

[6] *Learning to Branch in Mixed Integer Programming*
The 10th Learning and Intelligent Optimization Conference (LION), Keynote, May 2016

Invited Talks & Seminar Presentations

[7] *AI for Disaster Planning*
CIRI Annual Meeting, Dec 2022

[8] *AI-driven disaster-resilience infrastructure mitigation planning*
NeurIPS'22 Workshop on Artificial Intelligence for Humanitarian Assistance and Disaster Response, Invited Talk, Dec 2022

[9] *AI for Conservation*
WWF Fuller Science for Nature Fund, Seminar Series, Oct 2022

[10] *AI and O.R. for Environmental Sustainability*
Oregon State University, AI Seminar, Oct 2022

[11] *AI for Social Impact and Sustainable Development*
AI Institute for Optimization (AI4OPT) Faculty Training Program, June 2022

[12] *Decision-focused learning: integrating downstream combinatorics in ML*
IBM Research Seminar, June 2021

[13] *Learning to Decide*
USC AI Futures Symposium on AI & Data Science, May 2021

[14] *Predicting Human Migrations under Sea-Level Rise*
CMU AI for Social Good Symposium, Apr. 2021

[15] *Integrating Machine Learning in Discrete Optimization and Planning*
Facebook AI Research (FAIR) RL Seminar Series, Apr. 2021

[16] *Leveraging AI for Disaster-Resilient Infrastructure Mitigation Planning*
UIUC Critical Infrastructure Resilience Institute (CIRI) Webinar Series, Mar. 2021

[17] *Integrating Machine Learning and Discrete Optimization*
Qualcomm Academia Lecture, Mar. 2021

[18] *Decision-focused learning: integrating downstream combinatorics in ML*
IPAM Workshop on Deep Learning and Combinatorial Optimization, Feb. 2021

[19] *Using AI for Wildlife Monitoring*
UN Conference on "AI for the Planet", Feb. 2021

[20] *Making Good Decisions*
USC AI Futures Symposium: Will AI ever be one of us? Jan. 2021

[21] *Integrating Machine Learning and Discrete Optimization*
Los Alamos National Lab, Nov. 2020

[22] *Integrating Machine Learning and Discrete Optimization*
Emory University, CS Seminar Series, Nov. 2020

[23] *AI for Conservation*
Mechanism Design for Social Good (MD4SG) Seminar, Oct. 2020

[24] *AI for Conservation Planning and fighting Wildlife Poaching*
AAAS Annual Meeting, Feb. 2020

[25] *Leveraging AI for Resilient Infrastructure Planning*
5th Annual Le Val Lund Lecture Student Symposium on Lifeline Infrastructure and Community Resilience, Nov 2019

[26] *Learning-Driven Algorithms for Discrete Optimization*
Toyota Technological Institute of Chicago, Workshop on Automated Algorithm Design, August 2019

[27] *Using AI to fight wildlife poaching*
RE•WORK AI for Good Summit, June 2019

[28] *AI and OR for Conservation*
CPAIOR Conference, Master Class on Social Good, June 2019

[29] *Learning-Driven Algorithms for Discrete Optimization*
MIT, CSAIL Seminar on Algorithms and Complexity, April 2019

[30] *Learning-Driven Algorithms for Discrete Optimization*
SoCAL Machine Learning Symposium, March 2019

[31] *Learning-Driven Algorithms for Discrete Optimization*
SPOC Symposium "Machine Learning, Networks and Combinatorial Optimization", France, Dec. 2018

[32] *AI for Wildlife Conservation*
ESSEC Bussiness School, Seminar, France, Dec. 2018

[33] *AI for Wildlife Conservation*
Microsoft Research India, Sept. 2018

[34] *Learning-Driven Algorithms for Discrete Optimization*
University of Michigan, AI Seminar, Nov. 2018

[35] *Learning-Driven Algorithms for Discrete Optimization*
UCLA, CS Seminar, Nov. 2018

[36] *Machine Learning helps Discrete Optimization*
Information Sciences Institute, Nov. 2018

[37] *Machine Learning helps Discrete Optimization*
Carnegie Mellon University, Tepper Operations Research Seminar, Apr. 2018

[38] *Machine Learning helps Discrete Optimization*
California Institute of Technology, Computing and Mathematical Sciences, Apr. 2018

[39] *Discrete Optimization Challenges in Computational Sustainability*
Oxford University, Computer Science Seminar, Oct. 2018

[40] *Conservation Planning for Landscape Connectivity*
Wildlife Institute of India, Sept. 2018

[41] *Predicting Poaching Hot Spots from Previous Patrols*
Wildlife Institute of India, Sept. 2018

[42] *Network Design Approaches to Multi-species Biodiversity Conservation*
Computational Sustainability Virtual Seminar Series, Nov. 2017

[43] *Network Design Approaches to Biodiversity Conservation*
Emory University, Population Biology, Ecology and Evolution Seminar Series, Apr. 2017

[44] *Network Design Approaches to Biodiversity Conservation*
Clemson University, Industrial Engineering Distinguished Researcher Seminar Series, Aug. 2016

[45] *Challenges in Computational Sustainability*
University of Southern California, CS Colloquium, Mar. 2017

[46] *Machine Learning for Branch and Bound Search*
Clemson University, CS Seminar, Oct. 2016

[47] *Machine Learning for Branch and Bound Search*
Cornell University, AI Seminar, Apr. 2016

[48] *Learning to branch for Mixed Integer Programming*
Sandia National Lab, Host: Jean Paul Watson. Dec. 2015

[49] *Learning to branch for Mixed Integer Programming*
Georgia Tech, ISYE Discrete Optimization Seminar, Oct. 2015

[50] *Optimization Approaches for Conservation Planning*
University of Georgia, Warnell School of Forestry and Natural Resources, Feb. 2015

[51] *Optimization Approaches for Conservation Planning*
Oak Ridge National Lab, Nov. 2013

[52] *Computational advances in cost-effective large-scale conservation planning*
University of California Santa Cruz, April 2013

[53] *Challenges in Computational Sustainability*
Stony Brook University, CS Colloquium, April 2013

[54] *Challenges in Computational Sustainability*
Georgia Institute of Technology, CSE Seminar, Feb. 2013

Grants, Gifts, and Contracts

I have been supported by grants from NSF, NIH, DHS, and DARPA and by companies including Microsoft, Qualcomm and Exxon Mobil.

As Principal Investigator

[1] **Qualcomm** Gift
Gift to support ML for Combinatorial Optimization Algorithms research
Start: 09/06/2021
Total Amount: $75,000

[2] **DHS Center of Excellence "Critical Infrastructure Resilience Institute"**
Enhancing Water Distribution Networks Resilience with Scalable AI-based Planning
Period: 07/01/21-02/28/2023
Total Amount: $99,756
Role: PI

[3] **National Science Foundation** Award #1935451
ISN2: Detecting and Interdicting Illicit Wildlife Trafficking Supply Chains
Period: 09/01/2019-08/31/2022

Total Amount of USC subaward: $150,000 (my portion: 100%)
Role: PI of USC subaward, lead PI Meredith Gore, Michigan State U.

[4] **DHS Center of Excellence "Critical Infrastructure Resilience Institute"**
Leveraging AI for Disaster Response: scalable and effective algorithms for strategic planning
Period: 07/01/19-12/31/2020
Total Amount: $139,466
Role: PI

[5] **National Science Foundation** Award #1914522
NSF CRISP Type 1: Collaborative Research: Sustainable and Resilient Design of Interdependent Water and Energy Systems at the Infrastructure-Human-Resource Nexus
Period: 09/01/16 - 08/31/20
Total Amount: $246,937 (my portion: 100%)
Role: PI

[6] **Microsoft** Gift
Gift to support AI for Earth research
Start: 06/15/2019
Total Amount: $55,000 (my portion: 100%)

[7] **Microsoft AI for Earth**
Supporting Conservation Planning using Mathematical Optimization
Period: 03/01/2018-12/31/2018
Total Amount: $15,000 (my portion: 100%)

[8] **Microsoft AI for Earth**
Deep Learning Approach for Population Estimation from Satellite Imagery
Period: 12/01/17-07/31/2018
Total Amount: $15,000 (my portion: 100%)

[9] **National Science Foundation** Award #1522054
CompSustNet: Expanding the Horizons of Computational Sustainability
Period: 01/01/16-01/01/2021
Total Amount (GeorgiaTech Subaward): $190,000 (my portion: 100%)
Role: PI of GeorgiaTech subaward (transferred to Polo Chau, supporting my PhD students Gupta and Robinson) , lead PI Carla Gomes, Cornell U.

[10] **National Science Foundation** Award #1659757
REU Site: Civic Data Science
Period: 03/01/17 - 02/29/20
Total Amount: $393,827 (this is an Educational grant, I was in charge of leading the summer program)
Role: PI with Co-PI Chris Le Dantec (transferred to Chris Le Dantec)

[11] **DOI Southeast Climate Adaptation Science Center at NCSU**
Turning the Science of Connectivity into Action: Finding Consensus Models, Key Nodes, and Priority Parcels
Period: 10/13/16 - 04/15/17
Total Amount: $17,343 (my portion: 100%)

[12] **Georgia Tech, College of Computing**
Raytheon Faculty Fellowship: Understanding the Dynamics and Optimizing Conservation Strategies for Migratory Species
Period: FY 2015-16

Total Amount: the funds enough to support one 50% GRA for one year (for one student co-advised by both PIs, value around)
Role: PI with Co-PI Constantine Dovrolis

As Co-Principal Investigator

[13] **National Science Foundation** Award #2112533
AI Institute for Advances in Optimization
Period: 10/01/21 - 09/31/26
Total Amount: $19,852,123 (USC portion: $2,250,000)
Role: co-PI with PI Pascal van Hentenryck, co-PIs Dorit Hochbaum, Alper Atamturk, Charles Pierre

[14] **National Institute of Health** Award #1R21DA051802
Using Machine Learning to predict daily PTSD and cannabis use disorder symptoms among non-treatment seeking veterans
Period: 09/01/21 - 08/31/23
Total Amount: $255,450 (my portion: $35,824)
Role: co-I with PI Jordan Davis, co-I Eric Paterson

[15] **National Science Foundation** Award #2009103
CNH2-S: Species conservation and collaborative governance in an era of global change
Period: 04/01/21 - 07/31/24
Total Amount: $731,165 (my portion: $204,274)
Role: co-PI with PI Paul Armsworth, co-PIs Monica Papes, Charles Sims, Todd Schenk

[16] **National Science Foundation** Award #1763108
Preserving Biodiversity via Robust Optimization
Period: 07/15/18 - 07/14/22
Total Amount: $535,335 (my portion: 50%)
Role: co-PI with PI Phebe Vayanos

[17] **Lockheed Martin Corporation (Primary : DARPA)**
Multiplayer attacker-defender security games
Period: 12/17/17-07/18/18
Total Amount: $100,000 (my portion: $18,608≈ 19%)
Role: co-PI with PI Milind Tambe, and co-PI Phebe Vayanos
Candidate's Share: $18,608

[18] **Exxon Mobil Upstream Research Co.**
Leveraging Machine Learning and High Performance Computing
Period: 01/01/15 – 12/31/17
Total Amount: $405,940 (my portion: $165,000 ≈ 40%)
Role: Co-PI with PI George Nemhauser, and Co-PIs Shabbir Ahmed and David Bader

[19] **Sustainable Energy Institute, Georgia Tech**
Application of a networked infrastructure model in policy simulations for the Atlanta metropolitan region
Period: 10/01/15 – 10/01/17
Total Amount: $86,636 (my portion: $18,500 = 21%)
Role: Co-PI with PI Subhro Guhathakurta, and Co-PIs Merilyn Brown and Ram Pendyala

As Senior Personnel or Contributor

[20] **DARPA (via ISI)**
Phase 2 Deep Learning Agents and Game Theory for Military Decision-making (LAG-MD)
Period: 08/29/2019-06/09/2020
Total Amount: $475,000 (my portion: $115,000 24%)
Role: Senior Personnel with PI Jim Blythe, and co-PI Emilio Ferrara

[21] **DARPA (via ICT)**
Graphical Encoding of First Principles for Agent-Based Social Simulation (GEFPABSS)
Period: 12/15/2017-06/14/2019
Total Amount: $2,495,000 (my portion: $96,166)
Role: Senior Personnel with PI David Pynadath, and Co-PIs Richard S. John, Lynn C. Miller, Stephen J. Read, Milind Tambe, and Stacy C. Marsella

[22] **National Science Foundation**
Graduate Experience: Building Data Science Workforce Skills Through Social Good, Grand Challenges, and Local Engagement
Period: 08/01/16 - 07/31/17
Total Amount: $105,970 (This is an Educational grant that I was in charge of executing, it supported 0.5 of my summer months = $4,500)
Role: Senior Personnel with PI Srinivas Aluru

[23] **National Science Foundation**
RIPS Type 2: Participatory Modeling of Complex Urban Infrastructure
Period: 09/01/14-09/01/17
Total Amount: $2,499,999 (my portion: no assigned funding)
Role: Senior Personnel with PI John C. Crittenden, and Co-PIs Baabak Ashuri, Jennifer J. Clark, Richard M. Fujimoto, and Marc J. Weissburg

Societal and Policy Impacts

My work in computational sustainability has high societal and policy impacts as it is directly targeted at addressing some of the most pressing global challenges our society faces today. Hard optimization problems in the form of constrained resources and complex objectives arise in many policy and decision making settings pertinent to sustainability, especially urban planning and biodiversity conservation planning. The major impacts include:

(1) creating new principles and techniques broadly applicable to solving large scale real-world optimization problems including spatial optimization problems in sustainability

(2) helping practitioners, policy makers, and researchers who are not computer science or optimization experts to compute and understand the tradeoffs between decisions they need to make;

(3) transform the new cohort of computer scientists into also a cohort of global citizens keen to apply their skills and craft for social good;

Teaching

Course Development My educational agenda is tightly coupled with my research interests in addressing sustainability challenges by harnessing the power of computer science and algorithms. My educational program centers around growing a new cohort of diverse computer science students, with deep awareness of their society and environment, and who contextualize the skills they learn in courses with opportunities to make a difference. My educational plan consists of the two curriculum development

components: 1) infusing existing core courses with example applications related to sustainability, and 2) developing new courses focused on 'Computational Sustainability' and 'AI for Social Good/Sustainable Development', which teach techniques from data mining, machine learning and optimization in the context of real-world problems related biodiversity, climate, disasters and urban planning, agriculture, poverty, homelessness, and health. I also actively engage students in individualized directed research courses to work on problems in these domains.

Courses Taught

Lecture Courses

Semester	Course
USC	
Fa2021	CSI 461 AI for Sustainable Development
Fa2020, Sp2020, Fa2019	CSI 499 AI for Social Good
Sp2020, Fa2018	CSI 699 Topics in Discrete Optimization & Learning
GT	
Sp2017, Sp2016, Sp2015, Sp2014	CSE 8803 / 4803 Computational Sustainability
Spring 2017	ECE 2811 VIP: BeeSNAP
Fa2016, Fa2015, Fa2014	CSE 6140 A,Q / CX 4140 CSE Algorithms
Fa2016, Sp2016, Fa2015	ECE 2811 VIP: BeeSNAP

Guest Lectures

- USC CSCI-697 CSCI PhD Seminar, 2018, 2019, 2020
- GT CX4230: Computer Simulation (UG). Instr: Prof. Vuduc. Spring 2015, Spring 2016, Fall 2016.
- GT CSE6740: Machine Learning I. Instr: Prof. Le Song. Fall 2013.
- Cornell Topics in Computational Sustainability. Instr: Carla Gomes. Spring 2011.

Student Guidance

PhD Students Graduated:

1. Amrita Gupta (GT, PhD CSE 2020), Conservation Science Partners
2. Caleb Robinson (GT, PhD CSE 2020), Microsoft AI for Good
3. Elias Khalil (GT, PhD CSE 2019), IBM PhD Fellowship, PostDoc IVADO, Assist. Prof. UToronto
4. Payam Siyari (GT, PhD CSE 2018, co-advisor Dovrolis), Uber

PhD Students Current and Partially supervised:

1. Weizhe Chen (USC, PhD CS, co-advisor Koenig), Fall 2021-Present
2. Haoming Li (USC, PhD CS), Fall 2020-Present
3. Taoan Huang (USC, PhD CS, co-advisor Koenig), Fall 2019-Present, Qual 04/2022
4. Aaron Ferber (USC, PhD CS), Spring'18 - Present, Qual. 2021, Proposal 05/2022,
5. Elizabeth Bondi (USC, PhD CS, co-advisor with Tambe) Fall'16 - Summer'19, moved to Harvard
6. Jackson Killian (USC, PhD CS, co-advisor with Tambe) NSF Grad. Fellowship, Fall'18 - Summer'19, moved to Harvard
7. Lily Xu (USC, PhD CS, advisor with co-advisor Tambe) Fall'18 - Summer'19, moved to Harvard

Masters Students Advised or Directed Research

USC

1. Rohan , Fall 2022

2. Kishan Murthy, Fall 2022
3. Serena Zhu, Spring 2022
4. Paritosh Singh, Spring 2022
5. Eshwar Prasad Sivaramakrishnan, Spring 2022
6. Ayush Singh, 2019
7. Shuo Feng, 2019
8. Laksh Kumar Matai, 2018-2019, placed Salesforce

   Georgia Tech
9. Sumithra Sriram, 2017, placed BlackRock
10. Matthew May, 2017
11. Naman Goyal, 2014-2016, placed Yelp
12. S. Safarzadegan, 2014, placed Tower Research Capital
13. Spoorthi Ravi, 2014, placed PayPal
14. Parminder Singh Bhatia, 2014
15. Nitin Jain , 2013-2014, placed: Aetna
16. Elias Khalil, 2013-2014, Thesis: "Optimizing the Structure of Diffusion Networks: Theory and Algorithms" , M.D. Williamson Fellowship'14, D.V. Jackson Fellowship'13, placed GT CSE Ph.D.

Undergraduate Students Advised or Directed Research

USC

1. Pratysh
2. Gregory Bishop (CURVE fellow), Fa2022-
3. Kory Arfania (CURVE fellow), Fa2022-
4. Paul Somodi (CURVE fellow), Fa2021-
5. Isaac Gerstmann (CURVE fellow), Fa2021-
6. Nicole Russack (CURVE fellow), Fa2021-
7. Isaac Wahout (CURVE fellow), Sp2021-
8. Maciej Kilian, Fa2021-Sp2022
9. Shantanu Jhaveri (CURVE fellow), Fa2021-Sp2022
10. Haochen (Jack) Wang (CURVE fellow), Fa2021-
11. Amber Garcha (CURVE fellow), Fa2021-Sp2022
12. Trevor Asbery (CURVE fellow), Fa2021-Sp2022
13. Gauri Madhok (Undergraduate Research, NSF REU grant), Fa2019-Sp2022
14. Pooja Ganesh (IUSSTF-Viterbi summer intern), Su2021-Fa2021
15. Elaine Tren (CURVE fellow), Sp2021
16. Chi San (Jason) Chen (Undergraduate Research), Fa2019-Fa2021
17. Lucas Hu (Undergraduate Research, Merit Scholar), Sp2020-Sp2021
18. Guancheng (Ivan) Qui (Undergraduate Research, DHS grant), Su2019-Sp20

    Georgia Tech
19. Yonje Do (Directed Research)
20. Jin Kyoung Kwon (Directed Research)
21. Premkumar Saravanan (Undergraduate Research)
22. Renee Bach (Undergraduate Thesis, Advisor), President's Undergraduate Research Award (PURA)
23. Heather Strathearn (Project Mentor to Bee-INSPIRED Summer Interns)
24. Valerie Washington (Project Mentor to Bee-INSPIRED Summer Interns)
25. Olivia Williams (Project Mentor to Bee-INSPIRED Summer Interns)
26. Sachin Grover, India (Project Mentor to CRUISE summer intern)
27. Ankit Jain, India (Project Mentor to CRUISE summer intern)
28. Gokula Krishnan, India (Project Mentor to CRUISE summer intern)
29. Manfred Torres, Costa Rica (Project Mentor to CRUISE summer intern)

Ph.D. Thesis Committee Member

1. Xuefeng Hu, Adv: Ram Nevatia
2. Aaron Chan, Adv: Robin Jia
3. Basileal Imana, USC/CS. Adv. Korolova/Heidemann, Proposal: 09/2022
4. Wouter Kool, Univ. of Amsterdam, Adv: Welling/van Hoof, Defense 09/2022 [EXTERNAL]
5. Sarah Cooney, USC/CS. Adv: Raghavan, Proposal: 05/2021, Defense 05/2022
6. Aida Mostafazadeh Davani, USC/CS. Adv: Dehghani, Proposal 11/2021, Defense: 4/2022
7. Aida Rahmattalabi, USC/CS. Adv: Vayanos, Proposal 05/2020, Defense 05/2022
8. Hrayr Harutyunyan, USC/CS. Adv: Galstyan/Ver Steeg, Proposal 04/2022
9. Matthew C. Fontaine, USC/CS. Adv: Nikolaidis, Proposal 04/2022
10. Aaron Chan, USC/CS. Adv: Ren. Proposal 03/2022, Defense 11/2022
11. Shuotao Diao, USC/ISE. Avd: Sen, Proposal 09/2021
12. Nazgol Tavabi, USC/CS. Avd: Lerman, Defense 08/2021
13. Minh Pham, USC/CS. Avd: Knoblock, Proposal 08/2021
14. Jiaoyang Li, USC/CS. Adv: Koenig, Proposal: 05/2021
15. Joshua Rusow, USC/Social Work, Defense 05/2021
16. Jialin Song, Caltech, Defense 05/2021 [EXTERNAL]
17. Nitin Kamra, USC/CS. Adv: Liu, Defense: 04/2021
18. Victor R Martinez, USC/EE. Adv. Narayanan, Defense: 04/2021
19. Chi Zhang, USC/CS. Adv. Prasanna, Proposal: 03/2021
20. Yu Yang. Ext for GT/ISYE. Avd: Bolland. Defense: 07/2020 [EXTERNAL]
21. Liron Cohen, USC/CS. Adv: Koenig, Defense: 06/2020
22. Mo Chen, USC/CEE. Adv: Sanders, Defense: 06/05/2020
23. Rebecca Peer. USC/CEE. Adv: Sanders, Defense: 03/2019
24. Jiachen Zhang. USC/CEE. Adv: Ben-Weiss, Defense: 11/2018
25. Arash Mohegh. USC/CEE. Adv: Ben-Weiss, Defense: 08/2018

Georgia Tech

26. Mengmeng Liu. GT/CEE. Adv: Frost. Proposal: 08/2017
27. Kaeser Sabrin. GT/CS. Adv: Dovrolis. Proposal: 05/2017, Defense: 10/31/2018
28. Philip Pecher. GT/ISYE-CSE. Adv: Fujimoto, Proposal: 01/2017
29. Mehrdad Farajtabar. GT/CSE. Adv: Zha. Proposal: 04/2017, Defense: 03/30/2018
30. Eisha Nathan. GT/CSE. Adv: Bader. Proposal: 03/20/2017, Defense: 03/14/2018
31. Anita Zakrzewska. GT/CSE. Adv: Bader. Proposal: 11/29/2016, Defense: 03/16/2018
32. Lluis Miquel Munguia. GT/CSE. Adv: Bader. Proposal:01/xx/2016, Defense: 10/30/2017
33. Ezgi Karabulut. GT/ISYE. Adv: Ahmed/Nemhauser, Defense: 08/07/2017
34. Robert Pienta. GT/CSE. Avd: Chau. Proposal: passed, Defense: 06/27/2017
35. Hongteng Xu. GT/CSE. Adv: Zha. Proposal: Passed. Defense: 06/02/2017
36. Wenwen Zhang. GT/Arch. Adv: Guhathakurta, Proposal: 06/29/2016, Defense: 05/08/2017
37. Mohammed Ilbeigi. GT/Building Construction. Adv: Ashuri. Proposal: 12/01/2015, Defense: 03/31/2017
38. Aditi Misra. GT/Civil Eng. Adv: Watkins. Proposal: 05/22/2014, Defense: 06/23/2016
39. Ilias Fountalis. GT/CS. Adv: Dovrolis. Proposal: 12/03/2014, Defense: 03/30/2016
40. Felippe Castrillon: GT/Civil Eng. Adv: Guensler. Defense: 08/11/2015
41. Liangda Li, GT/CSE. Adv: Zha. Proposal: 4/9/2014. Defense: 04/22/2015

Ph.D. Qualifying Exam Committee Member

1. Nathan Justin, Adv: Phebe Vayanos
2. McKenna Peplinski, USC/CEE. Adv: Sanders, Qual exam 04/2022
3. Elan Markowitz, USC/CS. Adv: , Qual exam 04/2022
4. Taoan Huang, USC/CS. Adv: Dilkina/Koenig, Qual exam 04/2022

5. Matthew Fontaine, USC/CS. Adv. Nikolaidis, 04/2021
6. Basileal Imana, USC/CS. Adv. Korolova/Heidemann, 04/2021
7. Sina Aghaei, USC/ISE. Adv. Vayanos, 03/2021
8. Xuefeng Hu, USC/CS. Adv. Nevatia, 12/2020
9. Yijun Lin, USC/CS. Adv: Chiang/Ambite, 11/2020
10. Leili Tavabi, USC/CS. Adv. Soleymani, 11/2020
11. Chi Zhang, USC/CS. Adv. Prasanna, 07/2020
12. Sarah Cooney, USC/CS. Adv: Raghavan, 06/2020
13. Nitin Kamra, USC/CS. Adv: Liu, 12/03/2019
14. Ashok Deb, USC/CS. Adv: Ferrara, 06/21/2019
15. Kai Wang, USC/CS. Adv: Tambe, 04/04/2019
16. Aida Rahmattalabi, USC/CS. Adv: Tambe/Vayanos, 09/06/2018
17. Liron Cohen, USC/CS. Adv: Koenig, 05/11/2018
18. Ari Siesser. GT/ISYE-CSE. Adv: Pokutta
19. Yuzhi Guo. GT/CEE-CSE. Adv: Frost
20. Shaojun Ma. GT/Math-CSE. Adv: Cho
21. Mengmeng Liu. GT/CEE-CSE. Adv: Frost. 04/18/2017
22. Yuyu Zhang. GT/CSE. Adv: Sun. 11/18/2016
23. Rundong Du. GT/CSE. Adv: Park. 08/29/2016
24. Shang-Tse Chen. GT/CSE. Adv: Chau. 03/29/2016
25. Kaeser Sabrin. GT/CS. Adv. Dovrolis. 12/04/2015
26. Sara Karamati. GT/CSE. Adv: Vuduc. 12/03/2015
27. Eisha Nathan. GT/CSE. Adv: Bader. 12/02/2015
28. Chirag Jain. GT/CSE. Adv. Aluru. 11/23/2015
29. Camille Barcher. GT/CoA. Adv: French. 10/06/2015
30. Patrick Flick. GT/CSE. Adv: Aluru. 04/09/2015
31. Bo Dai. GT/CSE. Adv: Song. 04/22/2015
32. Mehrdad Farajtabar. GT/CSE. Adv: Zha. 11/25/2014

External PhD Committee Member

1. Yu Yang. GT/ISYE. Adv: Boland/Savelsbergh

Service

Professional Service

Editorial Board Memberships

Environmental Data Science, Associate Editor
AI Magazine, Editorial Board member, AI and Sustainability
Constraints (journal), Editorial Board member
Ecosphere (journal), Subject Matter Editor (Emerging Technologies)

Society Offices, Activities, and Memberships

AAAS member
AAAI member
ACM member
SIAM member
INFORMS member
Committee Member, INFORMS Energy, Natural Resources, Environment Section (ENRE) Best Publication Award

Invited Panelist

MIT Center for Excellence in Education Panel on "AI Uses & Ethics", Invited Panel. June 2022
South By Southwest (SXSW) Panel on "Wildlife rangers armed with AI", Mar. 2021

UN Conference on "AI for the Planet" panel on "Nature Biodiversity Conservation", Feb. 2021
Does AI enable equitable cities? – Perspectives from London and LA, Invited Panel, Jan. 2021
AI LA Earth Summit, Invited Panel, April 2019
AAAS Annual Meeting, Invited Panel, Feb. 2019

Evidence to Action: Research to Address Illegal Wildlife Trade Event, Panel on "Using ranger-generated data for predictive patrol planning", Sept. 2018

National Fire Protection Association Conference & Expo, Panel on Predictive Community Risk Reduction – Using Data Science to Reduce Fires, 2016

EMBARK: The Independent Sector National Conference, Panel on Practical Techniques for Social Impact Measurement, 2015

Invited Tutorials

1. Recent Advances in Integrating Machine Learning and Combinatorial Optimization. AAAI Conference on AI. Feb. 2021
2. AI and OR for Conservation. Bistra Dilkina. Master Class at 16th International Conference on the Integration of Constraint Programming, Artificial Intelligence, and Operations Research (CPAIOR). June 2019
3. Machine Learning for Branch and Bound. Bistra Dilkina. Master Class at 15th International Conference on the Integration of Constraint Programming, Artificial Intelligence, and Operations Research (CPAIOR). June 2018
4. Discrete Optimization Techniques & Applications in Sustainability. Bistra Dilkina. Doctoral Consortium on Computational Sustainability. July 2017
5. Research Challenges in Computational Sustainability. Bistra Dilkina & Stefano Ermon. International Joint Conference on AI (IJCAI). July 2016
6. Computational Advances in Conservation Planning for Landscape Connectivity. Bistra Dilkina. International Conference on Computational Sustainability, Copenhagen, Denmark. 2012

Conference Leadership

Co-Chair	AAAI-23 Special track on AI for Social Impact
Co-Chair	19th International Conference on the Integration of Constraint Programming, Artificial Intelligence, and Operations Research (CPAIOR), June 2022
Co-Chair	Symposium on AI for COVID-19 in LA, May 2020
Co-Chair	Conference on Prestigious Applications of Intelligent Systems (co-located with ECAI) 2020
Co-Chair	CPAIOR Master Class "AI for Social Good" 2019
Chair	Symposium on AI for Conservation, Feb 8, 2019
Associate Chair	1st ACM SIGCAS Conference on Computing and Sustainable Societies (COMPASS) 2018
Co-Chair	AAAI Special track on Computational Sustainability 2018
Co-Chair	AAAI Special track on Computational Sustainability 2017
Co-Chair	Doctoral Consortium on Computational Sustainability 2017
Co-Chair	4th International Conference on Computational Sustainability 2016
Publicity Chair	Learning and Intelligent Optimization Conference (LION) 2016
Publicity Chair	International Conference on Constraint Programming, AI and Operations Research (CPAIOR) 2013
Co-Chair	NESCAI: North East Student Colloquium on Artificial Intelligence 2008

Workshop Organizer

co-Chair, AAAI-23 Workshop on AI for Social Good 2023
co-Organizer, CCC/INFORMS Workshop on AI/OR 2022
co-Organizer, KDD Workshop on Fragile Earth 2022
co-Organizer, AAAI Workshop on AI for Decision Optimization 2022
co-Organizer, KDD Workshop on Fragile Earth 2021
co-Organizer, FEMA Multi-hazard Inventory Workshop 2021
co-Organizer, NeurIPS Workshop on Learning Meets Combinatorial Algorithms (LMCA) 2020
co-Organizer, KDD Workshop on Fragile Earth 2020
co-Organizer, TTIC Workshop on Automated Algorithm Design 2019
co-Chair, KDD Workshop on Data Mining and AI for Conservation 2019
Chair, IJCAI Workshop on AI & Conservation 2018
Chair, AAAI Workshop on Computational Sustainability 2015
Chair, CROCS: International Workshop on Constraint Reasoning and Optimization for Computational Sustainability 2012

Summer Program Organizer

Co-Organizer of USC Center for AI in Society Summer Fellowship Program, 2018
Co-Director of Data Science for Social Good Summer Program, 2015/2016/2017

Invited Session Chair

INFORMS Annual Conference, 'ML & Discrete Optimization', 2018, 2019, 2021
Intl. Symposium on Mathematical Programming, 'ML & Discrete Optimization', 2018
Intl. Symposium on Mathematical Programming, 'Computational Sustainability', 2018
INFORMS Annual Conference, 'Spatial Optimization and Conservation Reserve Design', 2015, 2016, 2017
Intl. Symposium on Mathematical Programming, 'Computational Sustainability', 2015

Grant Reviewer / Panelist

IBM Watson AI XPRIZE: Member of the judging panel for a $5 million global competition to develop AI technologies to tackle the world's grand challenges.

NSF Review Panel, 2016, 2018

Senior Conference Program Committee/ Area Chair
AAAI 2019, 2020, 2021, 2022

Conference Program Committee (total 30)
ICLR 2021
AAAI "AI for Social Impact Track" 2020-2021
AAAI Diversity event "Tray AI" for high school students 2020
ACM SIGCAS Conference on Computing and Sustainable Societies (COMPASS) 2019, 2020
Bloomberg Data for Good Exchange 2019
AAAI 2011-2020
IJCAI 2009, 2011, 2013, 2015-2017, 2020
KDD 2015, 2016, 2018-2019
ICML 2018-2019
NeurIPS 2018
CPAIOR 2013, 2018-2019
LION 2016-2018
CP 2016-2017
CompSust 2012

Conference Reviewer
IJCAI 2007; AAAI 2006, 2007; ECAI 2010 ; CP 2007, 2016; CPAIOR 2006-2008; SAT 2012; UAI 2012; SODA 2009; AAMAS 2008; STACS 2007

Journal Reviewer
Proceedings of the National Academy (PNAS)
Optimization Letters
IEEE Transactions on Knowledge and Data Engineering (TKDE)
Operations Research (OR) journal
European Journal of Operational Research
EURO Journal on Computational Optimization
INFORMS Journal of Computing
Annals of Mathematics and AI
IEEE Transactions on Computers

University Service

University of Southern California

Viterbi School of Engineering Committee Service

Viterbi Research Committee Member, Fall 2018-present
Viterbi Faculty Representation Experience Working Group, 2020-2021
Faculty Advisor for Women in Computing student organization, 2019-present
Faculty Advisor for CAIS++ student organization, 2019-present
USC CAIS Summer Fellowship Program co-Organizer, 2018
USC CAIS Seminar Series co-Organizer, Spring 2018-present

Department of Computer Science Committee Service

CS AI Area Leader, 2021-
CS DEI Committee, 2021-
CS APT Committee, 2020
CS Building Committee, 2020
Faculty Hiring Committee, 2020
Faculty Hiring Committee in AI - Chair, 2019
AI Rising Stars Symposium at USC (co-organizer), 2019

PhD Admissions and Fellowship Awards Committee Member, 2019

Program Development: Academic

CAIS Summer Fellowship Program, Co-organizer and Mentor, 2018
Viterbi Ipodia Program, Lecture Speaker to visiting international students, 2018

Georgia Institute of Technology (College = School, School = Department)
University-level Committee Service

Georgia Tech Global Change Executive Committee Member, 2016-2017
Georgia Tech Quality Enhancement Plan (QEP) for Student Learning Committee Member, 2015

College Committee Service

GT President's Undergraduate Research Awards (PURA) applications Reviewer, 2015-2016
Graduate Admissions Committee Chair for CSE/CS-CSE MS/PhD program, 2014-2015
Graduate Admissions Committee Member for CSE/CS-CSE MS/PhD program, 2013-2014

School Committee Service

Chair, Qualifying Exam in CSE Algorithms, Fall 2014-Spring 2017
Member, CSE Chair's Advisory Committee, 2016-2017
Member, CSE Seminar Committee, 2014-2015, 2015-2016, 2016-2017
Member, CSE Faculty Hiring Committee 2015-2016, 2016-2017
PhD Recruiting Committee 2013–2014 (member), 2014-2015 (chair)

Program Development: Research

Member of Advisory Committee to Brook Beyer Institute of Sustainable Systems, 2015

Program Development: Academic

REU Site Faculty PI, 2017
Mentor for Bee-INSPIRED: Georgia Tech undergraduate summer experience program funded by USDA, 2016-2017
Co-Director and Mentor of Data Science For Social Good summer program, 2015-2017
Mentor for Data Science and Social Good summer program, 2014-2017
Mentor for CRUISE: Computing Research Undergraduate Intern Summer Experience summer program, 2014-2015

Outreach & Other Education

Technovation, AI Education Advisory Committee (member) (which provides guidance on foundational knowledge, emerging technologies, and responsibility in the AI space, influencing curriculum development and AI education within the Technovation Community of over 20,000+ children, parents, educators and mentors across the world), 2019 - Present

Viterbi VAST PK-12 Outreach STEM Spotlight Host (high school students visit campus), April 2019

North Hollywood High School Zoo Magnet, Career Fair, organized a presentation on CAIS, delivered by PhD student Lily Xu, November 2018

LAUSD Local District East, Family College and Career Fair, USC "Meet an Engineer" outreach activity, May 2018

EYH: Expanding Your Horizons (workshop for middle school girls), Cornell University, 2008/2009/2010