

Vaibhav Srivastava

Assistant Professor
Electrical and Computer Engineering Department
Michigan State University

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Education

- 2007 - 2012 **PhD, Mechanical Engineering**, *University of California*, Santa Barbara.
Thesis: Stochastic Search and Surveillance Strategies for Mixed Human-Robot Teams
- 2010 - 2012 **MA, Statistics**, *University of California*, Santa Barbara.
- 2007 - 2011 **MS, Mechanical Engineering**, *University of California*, Santa Barbara.
- 2003 - 2007 **BTech, Mechanical Engineering**, *Indian Institute of Technology*, Bombay.

Research Interests

I am broadly interested in the modeling, analysis, and design of Cyber Physical Human Systems (CPHS). I have primarily worked in the following areas:

- Heterogeneous robotic teams including mixed human-automata teams
- Networked multi-agent systems

Professional Experience

- 2016 – **Assistant Professor**, *Electrical & Computer Engineering*, Michigan State University.
- 2013 – 2016 **Lecturer and Postdoctoral Research Associate**, *Princeton University*.
- 2007 – 2012 **Graduate Student Researcher**, *University of California*, Santa Barbara.

Outreach

- Faculty Mentor, *Engineering Summer Undergraduate Research Experience*, MSU. 2020, 2021
- Faculty Mentor, *Professorial Assistantship Program*, MSU Honors College. 2018–
- Faculty Mentor, *Summer Research Opportunity Program*, Graduate School, MSU. 2018, 2021
- Instructor, *High School Engineering Institute*, K-12 Outreach, MSU. 2017–
- Faculty Mentor, *NSF Research Experience for Teachers Program*, MSU. 2019–
- Faculty Advisor, *Unmanned Systems*, Student Organization MSU. 2019–
- Faculty Advisor, *Spartan Aerosystems*, Student Organization MSU. 2017–

Teaching Experience

- Network and Embedded Systems (ECE 960C), Michigan State University. Fall 2020
- Control Systems (ECE 313), Michigan State University. Fall 2017-19, 2021
- Robotics (ECE 417/818), Michigan State University, Spring 2017-
- Modern Control (MAE 434), Princeton University. Fall 2014

- Nonlinear Systems (ELE 523/ MAE 548), Princeton University. Spring 2014, 2015

Current Students/Postdocs

Postdoctoral Scholars

- Narendra Kumar Dhar*, PhD, IIT Kanpur
Topic: Cloud-enabled Control of Connected and Autonomous Vehicles

PhD Students

- Piyush Gupta, PhD student, ECE, Michigan State University
Topic: Optimal Control of Queuing Networks with Human Operators
- Ankur Kamboj, PhD student, ECE, Michigan State University
Topic: Motor Learning in High-dimensional Spaces
- Dong Hae Mangalindan, PhD student, ECE, Michigan State University
Topic: Trust-aware Human-Robot Interaction

* co-supervised.

Former Students/Postdocs

PhD Students

- Connor Boss, PhD, Electrical and Computer Engineering, MSU, August 2021
Thesis: Resilient Aerial Autonomy through Extended High-Gain Observers
Initial placement: Senior Professional Staff, Johns Hopkins University Applied Physics Laboratory
- Lai Wei, PhD, Electrical and Computer Engineering, MSU, August 2021
Thesis: Optimal Learning of Deployment and Search Strategies for Robotic Teams
Initial placement: Postdoctoral Scholar, University of Notre Dame

MS Students

- Yash Bagla, MS, Mechanical Engineering, Michigan State University, December 2019
Project: Receding Horizon Chance Constraint Motion Planning for Uncertain Multi-agent Systems
- Vishal Abhishek, MS, Mechanical Engineering, Michigan State University, May 2021
Thesis: Epidemic Models under Mobility on Multi-layer Networks
- Tuan Dang Hoang Nguyen, Electrical and Computer Engineering, Michigan State University
Project: Model Predictive Control for Aerial Robotics

Undergraduate Students

- Andrew McDonald (CSE), *Multi-robot Gaussian process estimation and coverage*, 2018-2021
- Dong Hae Mangalindan (ECE), *Design and control of hexrotor with a slung load*, 2020-2021
- Jingyi Shen (ECE), *EEG controlled robot*, Spring 2021
- Anthony Doan (ECE), *Cognitive architectures for shared human-autonomous driving*, Spring 2020
- Indra Adhikari (ECE), *Implementation of crazyswarm*, 2019-2020
- Ben Lynch (CSE), *Implementation of crazyswarm*, 2019-2020
- Ethan Clifford (ECE), *Aerial manipulation*, 2020

- Jacob Nicolas (ECE), *Cognitive architectures*, 2018-2019
- Michel Wineland-Leader (ECE), *EEG controlled robot*, 2018-2019
- Boluwatife Fashina (ECE), *Mimicking GPS signal indoors*, Fall 2018
- Tarek Kaafarani (ECE), *Photogrammetry and development of aerial robotic arm*, 2018-2019
- Daniel Martinez, Summer Research Opportunity Program, *Development of mobile robot swarm*, Summer 2018
- Jason Glynn (ECE), *Aerial robotics*, Spring 2018
- Charlie Giurdini (ME), *Development of an aerial manipulator*, 2017-2018
- Yash Dixit (ECE), *Development of kilobots testbed*, Summer 2017

Invited Talks

- 2020 University of Iowa; Workshop on Heterogeneous Multi-Robot Task Allocation and Coordination. Robotics: Science and Systems
- 2018 Mini-symposium on Dynamical Models of Individual and Collective Decision-making at 2018 SIAM Conference on the Life Sciences
- 2017 Mini-symposium on Excitability, Feedback and Collective Decision-Making Dynamics at 2017 SIAM Conference on Applications of Dynamical Systems, 6th Midwest Workshop on Control and Game Theory, Ann Arbor, MI
- 2016 University of California, San Diego; New York University; University of California, Riverside; Arizona State University; Michigan State University; University of Maryland, College Park
- 2015 University of Minnesota; University of Cambridge; University of Texas, Austin; Boston University
- 2014 Symposium on the Control of Network Systems, Boston; United Technologies Research Center; Indian Institute of Science, Bangalore; Indian Institute of Technology Bombay; Indian Institute of Technology Delhi; University of California, Santa Barbara
- 2013 Princeton University; University of Padova
- 2011 United Technologies Research Center

Publications

Journal articles and Book chapters

Under review

- [P1]. P. Gupta, S. D. Bopardikar, and V. Srivastava. Incentivizing collaboration in heterogeneous teams via common-pool resource games. *IEEE Transactions on Automatic Control*, 2021. Provisionally accepted. Available at: arXiv preprint arXiv: 1908.03938
- [P2]. L. Wei and V. Srivastava. Nonstationary stochastic multiarmed bandits: UCB policies and minimax regret. *IEEE Transactions on Automatic Control*, January 2021. Submitted. Available at: arXiv preprint arXiv: 2101.08980
- [P3]. C. J. Boss and V. Srivastava. A high-gain observer approach to robust trajectory estimation and tracking for a multi-rotor UAV. *IEEE Transactions on Control System Technology*, 2021. Submitted. Available at arXiv preprint arXiv: 2103.13429

Appeared/ In press

- [J1]. C. J. Boss and V. Srivastava. In-flight actuator failure recovery of a hexrotor via multiple models and extended high-gain observers. *IEEE Robotics and Automation Letters*, 6(4):6204–6211, 2021
- [J2]. L. Wei and V. Srivastava. Minimax policy for heavy-tailed bandits. *IEEE Control Systems Letters*, 5(4):1423–1428, 2021
- [J3]. Y. D. Zhong, V. Srivastava, and N. E. Leonard. Influence spread in the heterogeneous multiplex linear threshold model. *IEEE Transactions on Control of Network Systems*, 2021. In press. Available at: arXiv preprint arXiv:2008.04383
- [J4]. P. Landgren, V. Srivastava, and N. E. Leonard. Distributed cooperative decision making in multi-agent multi-armed bandits. *Automatica*, 125:109445, 2021
- [J5]. S. D. Bopardikar and V. Srivastava. Dynamic vehicle routing in presence of random recalls. *IEEE Control Systems Letters*, 4(1):37–42, 2020
- [J6]. M. Alfatlawi and V. Srivastava. An incremental approach to online dynamic mode decomposition for time-varying systems with applications to EEG data modeling. *Journal of Computational Dynamics*, 7(2):209–241, December 2020
- [J7]. Z. Aminzare, V. Srivastava, and P. Holmes. Gait transitions in a phase oscillator model of an insect central pattern generator. *SIAM Journal on Applied Dynamical Systems*, 17(1):626–671, 2018
- [J8]. R. Gray, A. Franci, V. Srivastava, and N. E. Leonard. Multi-agent decision-making dynamics inspired by honeybees. *IEEE Transactions on Control of Network Systems*, 5(2):793–806, 2018
- [J9]. P. Reverdy, V. Srivastava, and N. E. Leonard. Satisficing in multi-armed bandit problems. *IEEE Transactions on Automatic Control*, 62(8):3788 – 3803, 2017
- [J10]. V. Srivastava, S. Feng, J. D. Cohen, N. E. Leonard, and A. Shenhav. A martingale analysis of first passage times of time-dependent Wiener diffusion models. *Journal of Mathematical Psychology*, 77(2017):94–110, 2017
- [J11]. V. Srivastava, P. Holmes, and P. Simen. Explicit moments of decision times for single- and double-threshold drift-diffusion processes. *Journal of Mathematical Psychology*, 75(2016):96–109, 2016. Special Issue in Honor of R. Duncan Luce
- [J12]. J. Peters, V. Srivastava, G. Taylor, A. Surana, M. P. Eckstein, and F. Bullo. Human supervisory control of robotic teams: Integrating cognitive modeling with engineering design. *IEEE Control System Magazine*, 35(6):57–80, 2015
- [J13]. V. Srivastava and N. E. Leonard. Collective decision-making in ideal networks: The speed-accuracy trade-off. *IEEE Transactions on Control of Network Systems*, 1(1):121–132, 2014
- [J14]. P. Reverdy, V. Srivastava, and N. E. Leonard. Modeling human decision making in generalized Gaussian multiarmed bandits. *Proceedings of the IEEE*, 102(4):544–571, 2014
- [J15]. V. Srivastava and F. Bullo. Knapsack problems with sigmoid utility: Approximation algorithms via hybrid optimization. *European Journal of Operational Research*, 236(2):488–498, 2014
- [J16]. L. Carlone, V. Srivastava, F. Bullo, and G. C. Calafiore. Distributed random convex programming via constraints consensus. *SIAM Journal on Control and Optimization*, 52(1):629–662, 2014
- [J17]. V. Srivastava, F. Pasqualetti, and F. Bullo. Stochastic surveillance strategies for spatial quickest detection. *International Journal of Robotics Research*, 32(12):1438–1458, 2013
- [J18]. V. Srivastava, R. Carli, C. Langbort, and F. Bullo. Attention allocation for decision making queues. *Automatica*, 50(2):378–388, 2014

- [J19]. V. Srivastava, J. Moehlis, and F. Bullo. On bifurcations in nonlinear consensus networks. *Journal of Nonlinear Science*, 21(6):875–895, 2011
- [J20]. V. Srivastava, K. Plarre, and F. Bullo. Randomized sensor selection in sequential hypothesis testing. *IEEE Transactions on Signal Processing*, 59(5):2342–2354, 2011

Refereed conference proceedings

- [C1]. A. McDonald, L. Wei, and V. Srivastava. Online estimation and coverage control with heterogeneous sensing information. In *IEEE Conference on Control Technology and Applications*, San Diego, CA, August 2021. to appear
- [C2]. P. Gupta and V. Srivastava. On robust and adaptive fidelity selection for human-in-the-loop queues. In *European Control Conference*, Rotterdam, NL, July 2021. to appear
- [C3]. L. Wei, A. McDonald, and V. Srivastava. Multi-robot Gaussian process estimation and coverage: A deterministic sequencing algorithm and regret analysis. In *International Conference on Robotics and Automation*, Xi’an China, May 2021. to appear. Available at: arXiv preprint arXiv: 2101.04306
- [C4]. V. Abhishek, V. Srivastava, and R. Mukherjee. Towards a heterogeneous cable-connected team of UAVs for aerial manipulation. In *American Control Conference*, pages 53–58, New Orleans, LA, May 2021
- [C5]. C. J. Boss, V. Abhishek, and V. Srivastava. Towards multi-body multi-rotors for long reach manipulation. In *American Control Conference*, pages 111–116, New Orleans, LA, May 2021
- [C6]. V. Abhishek and V. Srivastava. SIR epidemic model under mobility on multi-layer networks. In *3rd IFAC Workshop on Cyber-Physical & Human Systems*, volume 53, pages 803–806, Beijing, China, 2020
- [C7]. L. Wei, X. Tan, and V. Srivastava. Expedited multi-target search with guaranteed performance via multi-fidelity Gaussian processes. In *IEEE/RSJ International Conference on Intelligent Robots and Systems*, pages 7095–7100, Las Vegas, NV (Virtual), October 2020
- [C8]. C. J. Boss, V. Srivastava, and H. K. Khalil. Robust tracking of an unknown trajectory with a multi-rotor UAV: A high-gain observer approach. In *American Control Conference*, pages 1429–1434, Denver, CO, July 2020
- [C9]. Y. Al-Nadawi, H. Al-Qassab, D. Kent, S. Pang, V. Srivastava, and H. Radha. Design of robust path-following control system for self-driving vehicles using extended high-gain observer. In *American Control Conference*, pages 1435–1440, Denver, CO, July 2020
- [C10]. V. Abhishek and V. Srivastava. SIS epidemic model under mobility on multi-layer networks. In *American Control Conference*, pages 3743–3748, Denver, CO, July 2020
- [C11]. Z. Aminzare, P. Holmes, and V. Srivastava. On phase reduction and second order phase response curves for noisy oscillators. In *IEEE Conf. on Decision and Control*, pages 4717–4722, Nice, France, December 2019
- [C12]. P. Gupta, S. D. Bopardikar, and V. Srivastava. Achieving efficient collaboration in heterogeneous teams using common-pool resource games. In *IEEE Conf. on Decision and Control*, pages 6924–6929, Nice, France, December 2019
- [C13]. Y. Bagla and V. Srivastava. On receding horizon chance constraint motion planning for uncertain multi-agent systems. In *ASME Dynamic Systems and Control Conference*, page V003T19A012, Park City, UT, October 2019
- [C14]. P. Gupta and V. Srivastava. Optimal fidelity selection for human-in-the-loop queues using semi-Markov decision processes. In *American Control Conference*, pages 5266–5271, Philadelphia, PA, July 2019

- [C15]. K. R. Ghusinga, V. Srivastava, and A. Singh. Driving an Ornstein–Uhlenbeck process to desired first-passage time statistics. In *European Control Conference*, pages 869–874, Naples, Italy, June 2019
- [C16]. L. Wei and V. Srivastava. On distributed multi-player multiarmed bandit problems in abruptly changing environment. In *IEEE Conf. on Decision and Control*, pages 5783–5788, Miami Beach, FL, December 2018
- [C17]. P. Reverdy and V. Srivastava. Multiarmed bandits for human-machine decision making. In *IEEE International Conference on Acoustics, Speech and Signal Processing*, pages 6986–6990, Calgary, Alberta, Canada, April 2018
- [C18]. P. Landgren, V. Srivastava, and N. E. Leonard. Social imitation in cooperative multiarmed bandits: Partition-based algorithms with strictly local information. In *IEEE Conf. on Decision and Control*, pages 5239–5244, Miami Beach, FL, December 2018
- [C19]. L. Wei and V. Srivastava. On abruptly-changing and slowly-varying multiarmed bandit problems. In *American Control Conference*, pages 6291–6296, Milwaukee, WI, June 2018
- [C20]. S. H. Cen, V. Srivastava, and N. E. Leonard. On robustness and leadership in Markov switching consensus networks. In *IEEE Conf. on Decision and Control*, pages 1701–1706, Melbourne, Australia, December 2017
- [C21]. Y. D. Zhong, V. Srivastava, and N. E. Leonard. On the linear threshold model for diffusion of innovations in multiplex social networks. In *IEEE Conf. on Decision and Control*, pages 2593–2598, Melbourne, Australia, December 2017
- [C22]. V. Srivastava and N. E. Leonard. Bio-inspired decision-making and control: From honeybees and neurons to network design. In *American Control Conference*, pages 2026–2039, Seattle, WA, May 2017
- [C23]. A. J. Savas, V. Srivastava, and N. E. Leonard. On distributed linear filtering with noisy communication. In *American Control Conference*, pages 2699–2704, Seattle, WA, May 2017
- [C24]. R. Gray, A. Franci, V. Srivastava, and N. E. Leonard. An agent-based framework for bio-inspired value-sensitive decision-making. In *IFAC World Congress*, pages 8568–8573, Toulouse, France, July 2017
- [C25]. M. Shvartsman, V. Srivastava, N. Sundaram, and J. D. Cohen. Using behavior to decode allocation of attention in context dependent decision making. In J. Reitter and F. E. Ritter, editors, *Proceedings of the 14th International Conference on Cognitive Modeling, ICCM*, pages 65–71, University Park, PA, 2016. Penn State
- [C26]. P. Landgren, V. Srivastava, and N. E. Leonard. Distributed cooperative decision-making in multiarmed bandits: Frequentist and bayesian algorithms. In *IEEE Conf. on Decision and Control*, pages 167–172, Las Vegas, NV, December 2016
- [C27]. P. Landgren, V. Srivastava, and N. E. Leonard. On distributed cooperative decision-making in multiarmed bandits. In *European Control Conference*, pages 243 – 248, Aalborg, Denmark, June 2016
- [C28]. M. Shvartsman, V. Srivastava, and J. D. Cohen. A theory of decision making under dynamic context. In C. Cortes, N.D. Lawrence, D.D. Lee, M. Sugiyama, and R. Garnett, editors, *Advances in Neural Information Processing Systems 28*, pages 2476–2484, Montréal, Canada, December 2015
- [C29]. V. Srivastava and N. E. Leonard. On first passage time problems in collective decision making with heterogeneous agents. In *American Control Conference*, pages 2113–2118, Chicago, IL, June 2015
- [C30]. V. Srivastava, P. Reverdy, and N. E. Leonard. Surveillance in an abruptly changing world via multiarmed bandits. In *IEEE Conf. on Decision and Control*, pages 692–697, Los Angeles, CA, December 2014

- [C31]. H. Emadi, V. Srivastava, U. Vaidya, and S. Bhattacharya. Further results on a class of nonlinear protocols in networked systems. In *Australian Control Conference*, pages 193–198, Canberra, Australia, November 2014
- [C32]. P. Reverdy, V. Srivastava, and N. E. Leonard. Algorithmic models of human decision making in Gaussian multi-armed bandit problems. In *European Control Conference*, pages 2210–2215, Strasbourg, France, June 2014 (**Best student paper award**)
- [C33]. V. Srivastava, P. Reverdy, and N. E. Leonard. Optimal foraging and multi-armed bandits. In *Allerton Conf. on Communications, Control and Computing*, pages 494–499, Monticello, IL, USA, October 2013
- [C34]. V. Srivastava and N. E. Leonard. On the speed-accuracy trade-off in collective decision making. In *IEEE Conf. on Decision and Control*, pages 1880–1885, Florence, Italy, December 2013
- [C35]. V. Srivastava, A. Surana, and F. Bullo. Adaptive attention allocation in human-robot systems. In *American Control Conference*, pages 2767–2774, Montréal, Canada, June 2012
- [C36]. L. Carlone, V. Srivastava, F. Bullo, and G. C. Calafiore. A distributed algorithm for random convex programming. In *Int. Conf. on Network Games, Control and Optimization (NetGCooP)*, pages 1–7, Paris, France, October 2011
- [C37]. V. Srivastava and F. Bullo. Hybrid combinatorial optimization: Sample problems and algorithms. In *IEEE Conf. on Decision and Control and European Control Conference*, pages 7212–7217, Orlando, FL, USA, December 2011
- [C38]. V. Srivastava and F. Bullo. Stochastic surveillance strategies for spatial quickest detection. In *IEEE Conf. on Decision and Control and European Control Conference*, pages 83–88, Orlando, FL, USA, December 2011
- [C39]. V. Srivastava, K. Plarre, and F. Bullo. Adaptive sensor selection in sequential hypothesis testing. In *IEEE Conf. on Decision and Control and European Control Conference*, pages 6284–6289, Orlando, FL, USA, December 2011
- [C40]. V. Srivastava, R. Carli, C. Langbort, and F. Bullo. Task release control for decision making queues. In *American Control Conference*, pages 1855–1860, San Francisco, CA, USA, June 2011
- [C41]. V. Srivastava, J. Moehlis, and F. Bullo. On bifurcations in nonlinear consensus networks. In *American Control Conference*, pages 1647–1652, Baltimore, MD, USA, June 2010

Refereed conference presentations (with no proceedings)

- [C42]. P. Landgren, V. Srivastava, and N. E. Leonard. Cooperative decision-making in multiarmed bandits. Multidisciplinary Conf. on Reinforcement Learning and Decision Making, June 2017
- [C43]. M. Shvartsman, V. Srivastava, and J. D. Cohen. Exploring fixed-threshold and optimal policies in multi-alternative decision making. Multidisciplinary Conf. on Reinforcement Learning and Decision Making, June 2017
- [C44]. V. Srivastava, S. Feng, and A. Shenhav. Performance metrics for time-varying drift and other diffusion based models for decision making. Multidisciplinary Conf. on Reinforcement Learning and Decision Making, June 2015
- [C45]. P. Reverdy, V. Srivastava, and N. E. Leonard. Modeling human decision-making in multi-armed bandits. Multidisciplinary Conf. on Reinforcement Learning and Decision Making, October 2013

Thesis

- [1]. V. Srivastava. *Stochastic Search and Surveillance Strategies for Mixed Human-Robot Teams*. PhD thesis, Mechanical Engineering Department, University of California at Santa Barbara, December 2012

Technical reports

- [1]. V. Abhishek and V. Srivastava. On epidemic spreading under mobility on networks. Technical report, September 2019
- [2]. A. Franci, V. Srivastava, and N. E. Leonard. A realization theory for bio-inspired collective decision making. Technical report, March 2015
- [3]. V. Srivastava, A. Surana, M. P. Eckstein, and F. Bullo. Mixed human-robot team surveillance. Technical report, November 2013

Toolboxes

- [1]. V. Srivastava, S. Feng, and A. Shenhav. First passage time computations for time varying drift diffusion processes. Available at: <https://github.com/PrincetonUniversity/msddm>
- [2]. V. Srivastava and P. Simen. Higher moments of decision time for drift diffusion processes. Available at: https://github.com/PrincetonUniversity/higher_moments_ddm

Research Funding

- [1]. National Science Foundation, National Robotic Initiative, IIS-1734272 *NRI: FND: A Framework for Human-Team-Supervised Autonomy with Application to Underwater Search and Rescue*, V. Srivastava (PI) and X. Tan (Co-PI), total amount \$750k, 8/17-8/20.
- [2]. National Science Foundation, ECCS-1823684 *7th Midwest Workshop on Control and Game Theory*, V. Srivastava (PI) and X. Tan (Co-PI), total amount \$20k, 6/18-2/19.
- [3]. Army Research Office/ Princeton University, *Resilience and Robustness in Ecological Distributed Decision-Making Dynamics*, N.E. Leonard (lead PI), S. Levin, and V. Srivastava (MSU PI, \$320,840), total amount \$981,898, 7/18-7/22.
- [4]. Air Force Office of Scientific Research, (*SECAF 2030 S&T*) *Autonomy in the AF in 2030*, V. Srivastava (PI) and V. Boddeti (Co-PI), total amount \$59,630, 6/18-2/19.
- [5]. MSU Strategic Partnership Grants (SPG), *Towards Situationally Aware Connected-and-Autonomous Mobility*, H. Radha (PI), G. Bente, S. Biswas, V. Boddeti, D. Morris, J. Nanzer, and V. Srivastava (Co-PI). total amount \$400k, 1/19-12/21.
- [6]. MSU-DFI Discretionary Funding Initiative, *Towards a Smart Object enabled Cyber-Human System for Evaluation of Children's Spatial Reasoning*, S. Biswas (PI) and V. Srivastava (Co-PI). total amount \$50k, 12/19 - 6/21.
- [7]. National Science Foundation, Mind Machine and Motor Nexus Program, *CMMI-1940950 Reshaping Motor Learning in High-Dimensional Tasks via Soft Robotic Physical Interactions*, V. Srivastava (PI), R. Ranganathan (Co-PI), and X. Tan (Co-PI). total amount \$700k, 4/20 - 3/23.
- [8]. National Science Foundation, National Robotic Initiative, ECCS-2024649 *NRI: INT: SMART: Soft Multi-Arm RoboT for Synergistic Collaboration with Humans*, Z. Li (PI), X. Tan (Co-PI), V. Srivastava (Co-PI) and, C. Cao (Co-PI). total amount \$1.5M, 9/20-8/24.

Professional Service

- Editorial Conference Editorial Board, IEEE Control System Society. Since July 2018
Conference Editorial Board, 2021 Modeling, Estimation and Control Conference
- Organization Workshop Chair, 2023 American Control Conference
Co-organizer, Workshop on Learning, Decision and Control over Networks, IEEE Conference on Decision and Control, December 2019

Student and Young Members Chair, ASME Dynamical Systems and Control Conference (DSCC), October 2018

Chair, Organizing Committee, 7th Midwest Workshop on Control and Game Theory, Michigan State University, April 2018

Co-Organizer, Autonomy Takes Flight: United States Air Force 2030, Michigan State University, June 2018

Co-organizer, 2011 Santa Barbara Control Workshop

Committees Program Committee, 2018 ASME Dynamical Systems and Control Conference
Program Committee, 2021 AAAI Undergraduate Consortium

Journal Annual Reviews in Control, Annals of Statistics, ASME Journal of Dynamic Systems,
Reviewer Measurement and Control, Behavior Research Methods, Proceedings of the IEEE, Physica D, IEEE Transactions on Automatic Control, IEEE Transactions on Information Theory, IEEE Transactions on Control of Network Systems, IEEE Control Systems Letters (L-CSS), Automatica, International Journal of Robotics Research, International Journal of Systems Science, IEEE Transactions on Robotics, International Journal of Robust and Nonlinear Control, Journal of Mathematical Psychology, European Journal of Control, Mathematics of Operational Research, Network Science, Nonlinear Dynamics, SIAM Journal on Applied Dynamical Systems, SIAM Journal on Control and Optimization

Conference IEEE Conference on Decision and Control (CDC), American Control Conference (ACC),
Reviewer IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), IEEE International Conference on Robotics and Automation (ICRA), ASME Dynamic Systems and Control Conference (DSCC), IFAC World Congress, International Conference on Acoustics, Speech, and Signal Processing (ICASSP)

Book Princeton University Press
Reviews

Proposal National Science Foundation, Earth Science Technology Office, NASA; Air Force Office
Reviewer of Scientific Research (AFOSR)

University Service

Committees Member, Graduate Admissions and Financial Aid Committee (GARFAC), ECE, MSU; Fall '16-pres

Member, Mobility Search Committee, College of Engineering, MSU; Spring '18

Member, Advisory Committee, ECE, MSU; Fall '18 - pres

Organizer, MSU Robotics and Control Seminar Series; Fall '20 - pres

Professional Membership

- Senior Member, Institute of Electrical and Electronics Engineers (IEEE)