Priyank Srivastava
Curriculum Vitae

Department of Mechanical Engineering	Email: psrivast@mit.edu
Massachusetts Institute of Technology	Website: http://terrano.ucsd.edu/priyank

EMPLOYMENT

Massachusetts Institute of Technology (MIT) — November 2021 – present
Postdoctoral Associate, Mechanical Engineering
Advisor: Dr. Anuradha Annaswamy

EDUCATION

University of California San Diego (UCSD) — September 2021
Ph.D., Mechanical Engineering — GPA: 4.0/4.0
Advisor: Prof. Jorge Cortés

Indian Institute of Technology (IIT) Delhi — June 2016
M.Tech., Control & Automation — GPA: 9.5/10.0
Advisor: Prof. S. Janardhanan

National Institute of Technology (NIT), Kurukshetra — June 2012
B.Tech., Electrical Engineering — GPA: 9.0/10.0

RESEARCH INTERESTS

- Synthesis of distributed algorithmic solutions for networked problems
- Design of accelerated methods for large-scale constrained optimization
- Enhancing the security and resilience of cyber-physical systems
- Aggregation and control of distributed energy resources
- Design of stable learning-based controllers
- Resource-aware control of networked systems
- Analysis of dynamical systems

AWARDS AND HONORS

- ACC Student Travel Grant — 2022
  American Control Conference
- IEEE CSS Student Travel Support Award — 2021
  60th Conference on Decision and Control
- IEEE CSS Student Travel Support Award — 2020
  59th Conference on Decision and Control
- Teaching Assistant Commendation — 2020
  Department of Mechanical and Aerospace Engineering, UCSD
- Mechanical and Aerospace Engineering Recruitment Fellowship — 2016
  Department of Mechanical and Aerospace Engineering, UCSD
- High Value Assistantship — 2013 – 2016
  Department of Electrical Engineering, IIT Delhi
- Central Sector Scholarship — 2008 – 2012
  Ministry of Education, India

Teaching Assistantships

Nonlinear Control, Instructor: Prof. Jorge Cortés, UCSD (Spring 2020)
Control Engineering - I, Instructor: Prof. R.K.P. Bhatt, IIT Delhi (Spring 2016)
Control Engineering - I, Instructor: Prof. I.N. Kar, IIT Delhi (Spring 2015)
Control Engineering Lab, IIT Delhi (Fall 2013, 2014, 2015)

Mentoring

Anjali Parashar (Ph.D. student, MIT, Spring 2022 – present)
Vineet J. Nair (Ph.D. student, MIT, Summer 2022 – present)
Jia Ming Qiu (B.S. student, UCSD, Summer 2019, co-advised with Tor Anderson)
Cole Walker Tynan-Wood (B.S. student, UCSD, Summer 2019, co-advised with Tor Anderson)

Professional Services

Member of Professional Societies
Institute of Electrical and Electronics Engineers (IEEE), Control Systems Society (CSS)

Reviewer for Journals
IEEE Transactions on Automatic Control, IEEE Transactions on Control of Network Systems, IEEE Control Systems Letters, IEEE/ASME Transactions on Mechatronics, Automatica, International Journal of Adaptive Control and Signal Processing, Journal of Renewable and Sustainable Energy

Reviewer for Conferences
IEEE Conference on Decision and Control, American Control Conference, European Control Conference, International Symposium on Mathematical Theory of Networks and Systems, IEEE Conference on Control Technology and Applications, Indian Control Conference, IFAC Conference on Modelling, Identification and Control of Nonlinear Systems

Organizer
Southern California Control Workshop, 37th edition (UCSD, January 2020)

Invited Talks

- Autonomous Energy Systems Workshop, National Renewable Energy Laboratory, July 2022
- Mechanical Engineering, Massachusetts Institute of Technology, June 2021
- Electrical and Computer Engineering, University of Toronto, April 2021

Publications

Journal Articles

(J-7) P. Srivastava, P. Hidalgo-Gonzalez, and J. Cortés. Learning constant-gain stabilizing controllers for frequency regulation under variable inertia. *IEEE Control Systems Letters*, 6:3056–3061, 2022

(J-6) P. Srivastava, G. Cavraro, and J. Cortés. Agent-supervisor coordination for decentralized event-triggered optimization. *IEEE Control Systems Letters*, 6:1970–1975, 2022

(J-5) P. Srivastava and J. Cortés. Solving linear equations with separable problem data over directed networks. *IEEE Control Systems Letters*, 6:596–601, 2022

(J-4) P. Srivastava, C.-Y. Chang, and J. Cortés. Enabling DER participation in frequency regulation markets. *IEEE Transactions on Control Systems Technology*, 2022. To appear

(J-3) T. Anderson, M. Muralidharan, P. Srivastava, H. Valizadeh Haghi, J. Cortés, J. Kleissl, S. Martínez, and B. Washom. Frequency regulation with heterogeneous energy resources: A realization using distributed control. *IEEE Transactions on Smart Grid*, 12(5):4126–4136, 2021
(First three authors contributed equally)

(J-2) P. Srivastava and J. Cortés. Network optimization via smooth exact penalty functions enabled by distributed gradient computation. *IEEE Transactions on Control of Network Systems*, 8(3):1430–1441, 2021

(J-1) P. Srivastava and J. Cortés. Nesterov acceleration for equality-constrained convex optimization via continuously differentiable penalty functions. *IEEE Control Systems Letters*, 5(2):415–420, 2021

Conference Proceedings

(C-9) A. Parashar, P. Srivastava, A. M. Annaswamy, B. Dey, and A. Chakraborty. Accelerated algorithms for a class of optimization problems with constraints. In *IEEE Conf. on Decision and Control*, Cancún, Mexico, December 2022. To appear

(C-8) P. Srivastava, P. Hidalgo-Gonzalez, and J. Cortés. Learning invariant stabilizing controllers for frequency regulation under variable inertia. In *IEEE Conf. on Decision and Control*, Cancún, Mexico, December 2022. To appear (Invited Paper)

(C-7) P. Srivastava, G. Cavraro, and J. Cortés. Agent-supervisor coordination for decentralized event-triggered optimization. In *American Control Conference*, pages 1739–1744, Atlanta, Georgia, June 2022 (Invited Paper)

(C-6) P. Srivastava and J. Cortés. Solving linear equations with separable problem data over directed networks. In *IEEE Conf. on Decision and Control*, Austin, Texas, December 2021 (Invited Paper)

(C-5) P. Srivastava and J. Cortés. Nesterov acceleration for equality-constrained convex optimization via continuously differentiable penalty functions. In *IEEE Conf. on Decision and Control*, Jeju Island, Republic of Korea, December 2020

(C-4) P. Srivastava and J. Cortés. Distributed algorithm via continuously differentiable exact penalty method for network optimization. In *IEEE Conf. on Decision and Control*, pages 975–980, Miami Beach, FL, December 2018 (Invited Paper)

(C-3) P. Srivastava, C.-Y. Chang, and J. Cortés. Participation of microgrids in frequency regulation markets. In *American Control Conference*, pages 3834–3839, Milwaukee, WI, May 2018

(C-2) P. Srivastava, S. Singh, and S. Janardhanan. Linear functional observers for unforced multi-output nonlinear systems. In *IFAC International Conference on Advances in Control and Optimization of Dynamical Systems*, pages 708–712, Hyderabad, India, February 2018

(C-1) S. Singh, P. Srivastava, and S. Janardhanan. Adaptive higher order sliding mode control for nonlinear uncertain systems. In *IFAC International Conference on Advances in Control and Optimization of Dynamical Systems*, pages 341–346, Hyderabad, India, February 2018

Conference Presentations

(P-2) T. Anderson, M. Muralidharan, P. Srivastava, H. Valizadeh Haghi, J. Cortés, J. Kleissl, S. Martínez, and B. Washom. Frequency regulation with heterogeneous energy resources: A realization using distributed control. In *IEEE Power & Engineering Society General Meeting*, Denver, CO, July 2022. To appear

(P-1) A. Khurram, P. Srivastava, J. Cortés, S. Martínez, and J. Kleissl. Enabling DER participation in frequency regulation markets. In *INFORMS Annual Meeting*, Indianapolis, IN, USA, October 2022. To appear