Prof. Siddhartha Srinivasa

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Employment

Professor 2023-
Boeing Endowed Professor in Computer Science & Engineering 2017-23
Computer Science & Engineering Department, University of Washington

Finmeccanica Associate Professor in Computer Science 2013-17
Associate Professor 2011-13
The Robotics Institute, Carnegie Mellon University

Member, Board of Directors, Zordi Inc. 2021-
Distinguished Engineer, Cruise Inc. 2022-25
Director, Robotics AI, Amazon Inc. 2018-22
First Wave Founder, Berkshire Grey Inc. 2014-18
Senior Research Scientist, Intel Labs Pittsburgh 2005-11

Education

Ph.D., Carnegie Mellon University (CMU) August 2005
Advisors: Michael Erdmann & Matthew Mason Thesis: *Control Synthesis for Dynamic Contact Manipulation*

B. Tech., Indian Institute of Technology Madras (IITM) August 1999
Advisor: A. Radhakrishnan Thesis: *Reverse Engineering using the Structured Lighting Technique*

Honors and Awards

- ACM/IEEE HRI Best Paper Award Finalist for Systems [50], 2025
- ACM/IEEE HRI Best Demo Award Winner [235], 2024
- ACM/IEEE HRI Best Paper Award Winner for Design [57], 2023
- ACM/IEEE HRI Best Paper Award Winner for Technical Advances in HRI [93], 2019
- ICAPS Best Student Paper Award Winner [99], 2019
- ICAPS Best Paper Award Winner [110], 2018
- IEEE Fellow, 2018
- ACM/IEEE HRI Best Paper Award Finalist [108], 2018
- Boeing Endowed Professorship in Computer Science, 2017-23
- CMU Women's Association outstanding graduating senior advisor (Rachel Holladay), 2017
- IEEE ICRA Best Vision Paper Award Finalist [137], 2016
- RSS Best Systems Paper Award Finalist [157], 2015
- IEEE ICRA Best Conference Paper Award Finalist [151], 2015
- IEEE ICRA Best Video Award Finalist [161], 2014
- Finmeccanica Chair in Computer Science, 2013-16
- RSS Early Career Spotlight Award, 2013
- RSS Best Paper Award Finalist [175], 2013
- IEEE ICRA Best Manipulation Paper Award Finalist [176], 2013
- Robotics Institute Cool Person of the Year Award, 2012

- Okawa Foundation Research Grant, 2012
- Office of Naval Research Young Investigator Award, 2012
- IEEE RO-MAN Best Paper Award Finalist [183], 2012
- RSS Best Paper Award Finalist [182], 2012
- RAS Most Active Technical Committee Award: Mobile Manipulation, 2011
- ACM/IEEE HRI Best Paper Award Winner [203], 2010
- IEEE IROS Best Paper Award Finalist [201], 2010
- IEEE ICRA Best Manipulation Paper Award Finalist [199], 2010
- IEEE ICRA Best Vision Paper Award Finalist [211], 2009
- Intel Corporate Technology Group Divisional Recognition Awards, May, July, Oct 2008
- Intel Research Pittsburgh Lab Research Awards, January, July 2006, January 2007
- Indian National Mathematics Olympiad, 1994

Mentoring

Current Ph.D. Students

Ashton Larkin	2024-
Yewon Lee	2024-
Ethan Pronovost	2024-
Yunchu Zhang (+Abhishek Gupta)	2023-
Sidharth Talia	2022-
Helen Wang (+Dieter Fox)	2022-
Bernie Zhou	2022-
Amal Nanvati (+Maya Cakmak)	2019-
Matthew Schmittle	2018-

Current Postdoctoral Fellows

Taylor Kessler Faulkner	2022-

Alumni - Postdoctoral Fellows

Christoforos Mavrogiannis	2019-2023 Assistant Professor @ Michigan
Sanjiban Choudhury	2018-2019 Assistant Professor @ Cornell
Matthew Barnes	2018-2019 Researcher @ Google
Tapomayukh Bhattacharjee	2017-2021 Assistant Professor @ Cornell
Oren Salzman	2016-2019 Assistant Professor @ Technion
Daqing Yi	2016-2018 Researcher @ Google
Henny Admoni	2015-2017 Assistant Professor @ CMU
Aaron Johnson	2015-2016 Assistant Professor @ CMU

Alumni - Ph.D.

Ethan Gordon — 2018-2024
Tractably Adaptable Food Manipulation for Robot-Assisted Feeding — Postdoc @ Penn

Liyiming Ke (+Abhishek Gupta) — 2017-2024
Teach Robot to Use Chopsticks: a Test Bed for Robotic Learning via Fine Manipulation — Researcher @ Physical Intelligence

William Agnew — 2017-2023
Human Priors for Reinforcement Learning — Postdoc @ CMU

Sherdil Niyaz — 2017-2022
Optimizing the Design of Robot Environments via Interleaved Optimization and White-Box Motion-Planning Researcher @ Motional

Brian Hou — 2016-2022
Robot Motion Planning with Uncertainty and Urgency — Researcher @ Aurora

Samuel Ainsworth — 2016-2022
Perspectives on Policy Learning — Researcher @ Cruise

Patrick Lancaster (+Josh Smith) — 2014-2022
Towards Dexterous In-Hand Manipulation via Electrostatic Braking and Pre-touch Sensing — Postdoc @ Meta

Aditya Vamsikrishna — 2016-2021
Efficient Robot Motion Planning in Cluttered Environments — Researcher @ Aurora

Gilwoo Lee — 2015-2020
Scalable Bayesian Reinforcement Learning — Founder @ Zordi

Stefanos Nikolaidis — 2014-2018
Mathematical Models of Adaptation in Human-Robot Collaboration — Assistant Professor @ USC

Laura Herlant — 2013-2018
Algorithms and Implementation and Studies on Eating with a Shared Control Robot Arm — Senior Robotics Research Scientist @ iRobot

Zita Marinho (+Geoff Gordon) — 2012-2018
Moment-based Algorithms for Structured Prediction — Researcher @ Sacoor Brothers

Shervin Javdani (+Drew Bagnell) — 2011-2017
Acting under Uncertainty for Information Gathering and Shared Autonomy — Robotics Engineer @ Aurora

Matt Klingensmith (+Michael Kaess) — 2013-2016
Tracking and Calibrating Robot Arms using SLAM Techniques — Roboticist @ Boston Dynamics

Jennifer King — 2012-2016
Robust Rearrangement Planning using Nonprehensile Interaction — Researcher @ Berkshire Grey

Michael Koval (+Nancy Pollard) — 2012-2016
Robust Manipulation via Contact Sensing — Software Engineer @ Waymo

Christopher Dellin — 2009-2016
Completing Manipulation Tasks Efficiently in Complex Environments — Roboticist @ Nuro

Anca Dragan — 2009-2015
Legible Robot Motion Planning — Associate Professor @ Berkeley

Mehmet Dogar — 2008-2013
A Framework for Manipulation in Cluttered Environments — Associate Professor @ Leeds

Alvaro Collet (+Martial Hebert) — 2009-2012
Lifelong Robotic Object Perception — Engineering Lead @ Facebook

Dmitry Berenson (+James Kuffner) — 2006-2011
Constrained Manipulation Planning — Associate Professor @ Michigan

Alumni - M.S.

Jeongseok Lee — 2016-2018
A Linear-Time Variational Integrator for Multibody Systems — Researcher @ Meta

Pengju Jin — 2017-2017
Highly Robust Pose Estimation from Single Frame RGBD — Researcher @ Aurora

Shushman Choudhury — 2015-2017
Anytime Geometric Motion Planning on Large Dense Roadmaps — Ph.D. @ Stanford

Rosario Scalise (+Stephanie Rosenthal) — 2015-2017
Human-Centered Design of Robot Explanations — Ph.D. @ UW

Shen Li (+Stephanie Rosenthal) — 2015-2017
Automatically Evaluating and Generating Clear Robot Explanations — Ph.D. @ MIT

Evan Shapiro — 2013-2015
A Hierarchical Framework for Configuration Space Task Planning — CEO @ Mina Foundation

Aaron Walsman — 2013-2015
ROCK: Robust Object Constellation for Kinematic Pose — Ph.D. @ UW

Elizabeth Cha (+Jodi Forlizzi) — 2012-2014
Robots in the Home: Qualitative and Quantitative Insights into Kitchen Organization — Researcher @ Waymo

Kyle Strabala — 2010-2012
Learning the Communication of Intent Prior to Physical Collaboration — Scientist @ Near Earth Autonomy

Martin Herrmann (+Dr.-Inf. Uwe Hanebeck @ Universitat Karlsruhe) — 2009-2009
Active scene and object reconstruction for robotic manipulation from vision and laser — TU Braunschweig

Garratt Gallagher (+Drew Bagnell) — 2007-2009
GATMO: A Generalized Approach to Tracking Movable Objects — Google Robotics

Alumni - Other

Ajinkya Kamat, Staff — 2018-2019
Research: *Outdoor Unstructured Mobile Manipulation* — MRSD @ CMU

Youngsun Kim, Staff — 2017-2019
Research: *Robot-Assisted Feeding* — Engineer @ Zordi

Hanjun Song, Staff — 2016-2019
Research: *Sensing Shear Forces During Food Manipulation* — Ph.D. @ MIT

Rachel Holladay, B.S. 2013-2017
Thesis: *Following Paths in Task Space: Distance Metrics and Planning Algorithms* Assistant Professor @ Penn

Pyry Matikainen, Teaching Fellow 2015-2017
Research: *Visual Computing*

Prasanna Velagapudi, Research Scientist 2012-2014
Research: *Multi-Step Mobile Manipulation* CTO @ Agility

Graduate Interns

Atharva Pradhan (UW) 2024
Jonathan Spencer (Princeton) 2022
Yunchu Zhang (CMU) 2022
Rishabh Madan (IIT Kharagpur) 2020
Sara Sheikholeslami (UBC) 2019
Lerrel Pinto (CMU) 2019
Daniel Gallenberger (TU Munich) 2018
Stefania Pellegrinelli (ITIA-CNR) 2015
Marco Cognetti (University of Rome) 2015
Joshua Haustein (Universitat Karlsruhe) 2014
Henny Admoni (Yale) 2013
Georg Bartels (TU Bremen) 2013
Katie Correll (CMU) 2013
Michael Koval (CMU) 2012
Steven Gray (Penn) 2011
Vincenzo Micelli (University of Parma) 2011
Tim Niemueller (RWTH Aachen) 2010
Peter Kaiser (Universitat Karlsruhe) 2010
Maya Cakmak (Georgia Tech) 2010
Alex Sorokin (UIUC) 2010
Lillian Chang (CMU) 2009
Ross Knepper (CMU) 2009
Laura Lindzey (CMU) 2009
Manel Martinez (CMU) 2009
Julius Ziegler (Universitat Karlsruhe) 2009
Nico Blodow (TU Munich) 2009
Rosen Diankov (CMU) 2009
Geoffrey Hollinger (CMU) 2008
Kevin Peterson (CMU) 2008
Nathan Ratliff (CMU) 2008
Martin Rufli (ETH Zurich) 2008
Michael Ashley-Rollman (CMU) 2006
Stuart Anderson (CMU) 2006
Michael DeRosa (CMU) 2006
Ashish Deshpande (Michigan) 2006
Jiaxin Fu (CMU) 2006
Preethi Bhatt (CMU) 2006

Undergraduate Interns

Abhay Deshpande (UW) 2022-2024
Quanquan Peng (SJTU) 2024
Arnav Thareja (UW) 2023
Rohan Baijal (IIT Kanpur) 2022-2023

Sriyash Poddar (IIT Kharagpur)	2022-2023
Ramya Challa (UW)	2022-2023
Sumegh Roychowdhury (IIT Kharagpur)	2021
Colin Summers (UW)	2018-2020
Matthew Rockett (UW)	2018-2020
Sumegh Roychowdhury (IIT Kharagpur)	2020
Sidharth Talia (Bharati Vidyapeeth College of Engineering)	2020
Johan Michalov (UW)	2018-2019
Rajat Kumar Jenamani (IIT Kharagpur)	2019
Jeffrey Maxwell (UW)	2019
Shivam Singhal (UW)	2019
Minae Kwon (Stanford)	2018
Savanna Yee (UW)	2018
Nanda Sundaresan (UW)	2018
Kaiden James Field (UW)	2018
Connor Geiman (UW)	2018
Tao Jin (UW)	2018
Rahul Vernwal (IIT Kharagpur)	2018
Maha Alrashed (BU)	2018
Abdullah Albakry (NC State)	2018
Ramon Qu (UW)	2017
Nanda Sundaresan (UW)	2017
Jeffrey Maxwell (UW)	2017
Vinitha Ranganeni (CMU)	2015-2017
Kevin Zhang (CMU)	2015-2017
Pengju Jin (CMU)	2014-2017
Rachel Holladay (CMU)	2013-2017
Joey Fernau (CMU)	2015
Angela Wang (CMU)	2014
Peter McHale (CMU)	2014
Vikram Sunder (CMU)	2014
Don Zheng (CMU)	2014
Neil Jassal (CMU)	2014
Myles Blodnick (CMU)	2014
Scott Martin (CMU)	2014
Yuyang Guo (CMU)	2013-2014
Andrey Kurenkov (Georgia Tech)	2013
Abhijeet Tallavajhula (IIT)	2012
Bo Xiong (Connecticut)	2012
Corina Guaru (Jacobs)	2012
Debidatta Dwebi (IIT)	2012
Kenton Lee (Penn)	2012
Dominic Zirbel (CMU)	2012
Alex Zirbel (CMU)	2011-2012
Tom Mullins (CMU)	2011
Nick Stanley (CMU)	2011
Tudor Achim (CMU)	2009-2010
Andrew Yeager (CMU)	2009
Ian-Clanton Thuon (CMU)	2008-2009
Daniel Dewey (CMU)	2007-2008

Ph.D Thesis Committees

Vinitha Ranganeni (UW)	2024
Nick Walker (UW)	2024
Nathan Hatch (UW)	2024
Mohak Bharadwaj (UW)	2024

Anqi Li (UW)	2024
Ekta Samani (UW)	2023
Christopher Xie (UW)	2021
Senka Krivic (University of Innsbruck)	2019
Parker Owan (UW)	2019
Arunkumar Byravan (UW)	2019
Rahul Warrier (UW)	2018
Justin Huang (UW)	2018
Connor Schenk (UW)	2017-18
Kiril Solovey (Technion)	2018
Sanjiban Choudhury (CMU)	2013-17
Venkatraman Narayanan (CMU)	2013-17
Breelyn Kane Styler (CMU)	2011-18
Mike Phillips (CMU)	2011-15
Alberto Rodriguez (CMU)	2007-13
Ross Knepper (CMU)	2006-11
Nathan Ratliff (CMU)	2004-09

Publications (Google Scholar)

Refereed Journals

[1] Vincent Roulet, S.S. Srinivasa, Maryam Fazel, and Zaid Harchaoui. On global and local convergence of iterative linear quadratic optimization algorithms for discrete time nonlinear control. *Journal of Machine Learning Research*, 2025.

[2] Patrick Lancaster, Christoforos Mavrogiannis, Siddhartha Srinivasa, and Joshua R. Smith. Electrostatic brakes enable individual joint control of underactuated, highly articulated robots. *The International Journal of Robotics Research*, 2024.

[3] Jaein Lim, Mahdi Ghanei, Connor Lawson, Siddhartha Srinivasa, and Panagiotis Tsiotras. Lazy incremental search for efficient replanning with bounded suboptimality guarantees. *The International Journal of Robotics Research*, 2024.

[4] Vincent Roulet, S.S. Srinivasa, Maryam Fazel, and Zaid Harchaoui. Iterative linear quadratic optimization for nonlinear control: Differentiable programming algorithmic templates. *Open Journal of Mathematical Optimization*, 5:1–63, 2024.

[5] C Mavrogiannis, K Balasubramanian, S. Poddar, A. Gandra, and S. S. Srinivasa. Winding through: Crowd navigation via topological invariance. *IEEE Robotics and Automation Letters*, 8(1), 2023.

[6] Christoforos Mavrogiannis, Jonathan A DeCastro, and Siddhartha S Srinivasa. Abstracting road traffic via topological braids: Applications to traffic flow analysis and distributed control. *The International Journal of Robotics Research*, 2023.

[7] N. Funk, C. Schaff, R. Madan, T. Yoneda, J. U. De Jesus, J. Watson, E. K. Gordon, F. Widmaier, S. Bauer, S. S. Srinivasa, T. Bhattacharjee, M. R. Walter, and J. Peters. Benchmarking structured policies and policy optimization for real-world dexterous object manipulation. *IEEE Robotics and Automation Letters*, 7(1):478–485, 2022.

[8] C. Kessens, M. Kaplan, T. Rocks, P.R. Osteen, J. Rogers, E. Stump, A. Hurwitz, J. Fink, L. Quang, M. Gonzalez, J. Patel, M. DiBlasi, S. Patel, M. Weiker, D. Patel, J. Bowkett, R. Detry, S. Karumanchi, L. Matthies, J. Burdick, Y. Oza, A. Agarwal, A. Dornbush, D. Saxena, M. Likhachev, K. Schmeckpeper, K. Daniilidis, A. Kamat, S. Choudhury, A. Mandalika, and S.S. Srinivasa. Human-scale mobile manipulation using RoMan. *Journal of Field Robotics*, 2:1232–1262, 2022.

[9] J. Spencer, S. Choudhury, M. Barnes, M. Schmittle, M. Chiang, P. Ramadge, and S.S. Srinivasa. Expert intervention learning: An online framework for robot learning from explicit and implicit human feedback. *Autonomous Robots*, 46:99–113, 2022.

[10] M. Bhardwaj, S. Choudhury, B. Boots, and S. Srinivasa. Leveraging Experience in Lazy Search. *Autonomous Robots*, 45(7):979–996, 2021.

[11] J.G. Gammell, T. Barfoot, and S.S. Srinivasa. Batch Informed Trees (BIT*): Informed asymptotically optimal anytime search. *The International Journal of Robotics Research*, 2020.

[12] B. Yang, P.E. Lancaster, S.S. Srinivasa, and J.R. Smith. Benchmarking robot manipulation with the rubik's cube. *IEEE Robotics and Automation Letters*, 2020.

[13] T. Bhattacharjee, G. Lee, H. Song, and S.S. Srinivasa. Towards robotic feeding: Role of haptics in fork-based food manipulation. *IEEE Robotics and Automation Letters*, 2019.

[14] M. Chen, S. Nikolaidis, H. Soh, D. Hsu, and S.S. Srinivasa. Trust-aware decision making for human-robot collaboration: Model learning and planning. *ACM Transactions on Human-Robot Interaction*, 2019.

[15] R. Holladay, O. Salzman, and S.S. Srinivasa. Minimizing task-space fréchet error via efficient incremental graph search. *IEEE Robotics and Automation Letters*, 2019.

[16] Jeongseok Lee, Michael X. Grey, Sehoon Ha, Tobias Kunz, Sumit Jain, Yuting Ye, Siddhartha S. Srinivasa, Mike Stilman, and C. Karen Liu. DART: Dynamic animation and robotics toolkit. *The Journal of Open Source Software*, 3(22):500, feb 2018.

[17] J.G. Gammell, T. Barfoot, and S.S. Srinivasa. Informed sampling for asymptotically optimal path planning. *IEEE Transactions on Robotics*, 34(4):966–984, 2018.

[18] S. Javdani, H. Admoni, S. Pellegrinelli, S.S. Srinivasa, and J.A. Bagnell. Shared autonomy via hindsight optimization for teleoperation and teaming. *The International Journal of Robotics Research*, 37(7):717–742, 2018.

[19] S. Nikolaidis, M. Kwon, J. Forlizzi, and S.S. Srinivasa. Planning with verbal communication for human-robot collaboration. *ACM Transactions on Human-Robot Interaction*, 7(3), 2018.

[20] B. Calli, A. Singh, J. Bruce, W. W. Aaron, K. Konolige, S.S. Srinivasa, P. Abbeel, and A.M. Dollar. YCB benchmarking project: Object set, data set and their applications. *Journal of The Society of Instrument and Control Engineers*, 56(10):792–797, 2017.

[21] I. Dryanovski, M.K. Klingensmith, S.S. Srinivasa, and J. Xiao. Large-scale, real-time 3D scene reconstruction on a mobile device. *Autonomous Robots*, 41(6):1423–1445, 2017.

[22] M. Ghorbel, J. Pineau, R. Gourdeau, S. Javdani, and S.S. Srinivasa. A decision-theoretic approach for the collaborative control of a smart wheelchair. *International Journal of Social Robotics*, pages 1–15, 2017.

[23] S. Nikolaidis, D. Hsu, and S.S. Srinivasa. Human-robot mutual adaptation in collaborative tasks: Models and experiments. *The International Journal of Robotics Research*, 36(5-7):618–634, 2017.

[24] A. Johnson, J. King, and S.S. Srinivasa. Convergent planning. *IEEE Robotics and Automation Letters*, 2016.

[25] M. Klingensmith, S.S. Srinivasa, and M. Kaess. Articulated robot manipulator simultaneous localization and mapping (ARM-SLAM). *IEEE Robotics and Automation Letters*, 2016.

[26] M.C. Koval, N.S. Pollard, and S.S. Srinivasa. Pre- and post-contact policy decomposition for planar contact manipulation under uncertainty. *The International Journal of Robotics Research*, 35(1–3):244–264, 2016.

[27] B. Calli, A. Walsman, A. Singh, S.S. Srinivasa, P. Abbeel, and A.M. Dollar. Benchmarking in manipulation research: Using the Yale-CMU-Berkeley object and model set. *IEEE Robotics and Automation Magazine*, 22(3):36–52, 2015.

[28] A. Collet, B. Xiong, C. Gurau, M. Hebert, and S.S. Srinivasa. HerbDisc: Towards lifelong robotic object discovery. *The International Journal of Robotics Research*, 34(1):3—-25, 2015.

[29] A.D. Dragan, R. Holladay, and S.S. Srinivasa. Deceptive robot motion: synthesis, analysis and experiments. *Autonomous Robots*, 39(3):331–345, 2015.

[30] M.C. Koval, N.S. Pollard, and S.S. Srinivasa. Pose estimation for planar contact manipulation with manifold particle filters. *The International Journal of Robotics Research*, 34(7):922–945, 2015.

[31] A. Stentz, H. Herman, A. Kelly, E. Meyhofer, G.C. Haynes, D. Stager, B. Zajac, J.A. Bagnell, J. Brindza, C. Dellin, M. George, J. Gonzalez-Mora, S. Hyde, M. Jones, M. Laverne, M. Likhachev, L. Lister, M.D. Powers, O. Ramos, J. Ray, D.P. Rice, J. Scheifflee, R. Sidki, S.S. Srinivasa, K. Strabala, J.P. Tardif, J. Valois, J.M. Vandeweghe, M.D. Wagner, and C. Wellington. CHIMP, the CMU highly intelligent mobile platform. *Journal of Field Robotics*, 32(2):209–228, 2015.

[32] A.D. Dragan and S.S. Srinivasa. Integrating human observer inferences into robot motion planning. *Autonomous Robots*, 37(4):351–368, 2014.

[33] R. Paolini, A. Rodriguez, S.S. Srinivasa, and M.T. Mason. A data-driven statistical framework for post-grasp manipulation. *The International Journal of Robotics Research*, 33(4):600—-615, 2014.

[34] M.R. Dogar, M.C. Koval, A. Tallavajhula, and S.S. Srinivasa. Object search by manipulation. *Autonomous Robots*, 36(1–2):153–167, 2013.

[35] M.R. Dogar and S.S. Srinivasa. Physics-based manipulation in human environments. *Journal of the Robotics Society of Japan*, 31(4):353–357, 2013.

[36] A.D. Dragan, K.T. Lee, and S.S. Srinivasa. Teleoperation with intelligent and customizable interfaces. *Journal of Human-Robot Interaction*, 1(3), 2013.

[37] A.D. Dragan and S.S. Srinivasa. A policy-blending formalism for shared control. *The International Journal of Robotics Research*, 32(7):790–805, 2013. (Conference version was **Best Conference Paper Award Finalist, RSS 2012**).

[38] K. Strabala, M.K. Lee, A.D. Dragan, J. Forlizzi, S.S. Srinivasa, M. Cakmak, and V. Micelli. Towards seamless human-robot handovers. *Journal of Human-Robot Interaction*, 2(1), 2013.

[39] M. Zucker, R. Ratliff, A.D. Dragan, M. Pivtoraiko, M. Klingensmith, C. Dellin, J.A. Bagnell, and S.S. Srinivasa. CHOMP: Covariant Hamiltonian Optimization for Motion Planning. *The International Journal of Robotics Research*, 32(9–10):1164–1193, 2013.

[40] M.R. Dogar and S.S. Srinivasa. A planning framework for non-prehensile manipulation under clutter and uncertainty. *Autonomous Robots*, 33(3):217–236, 2012. (Conference version was **Best Conference Paper Award Finalist, IEEE IROS 2010**).

[41] R.A. Knepper, S.S. Srinivasa, and M.T. Mason. Toward a deeper understanding of motion alternatives via an equivalence relation on local paths. *The International Journal of Robotics Research*, 31(2):168–187, 2012.

[42] M.T. Mason, A. Rodriguez, S.S. Srinivasa, and A.S. Vazquez. Autonomous manipulation with a general-purpose simple hand. *The International Journal of Robotics Research*, 31(5):688–703, 2012.

[43] S.S. Srinivasa, D. Berenson, M. Cakmak, A. Collet, M.R. Dogar, A.D. Dragan, R.A. Knepper, T. Niemueller, K. Strabala, M. Vandeweghe, and J. Ziegler. HERB 2.0: Lessons learned from developing a mobile manipulator for the home. *Proceedings of the IEEE*, 100(8):1–19, 2012.

[44] D. Berenson, S.S. Srinivasa, and J. Kuffner. Task Space Regions: A framework for pose-constrained manipulation planning. *The International Journal of Robotics Research*, 30(12):1435–1460, 2011.

[45] A. Collet, M. Martinez, and S.S. Srinivasa. The MOPED framework: Object recognition and pose estimation for manipulation. *The International Journal of Robotics Research*, 30(10):1284–1306, 2011. (Conference version was **Best Vision Paper Award Finalist, IEEE ICRA 2009**).

[46] S.S. Srinivasa, D. Ferguson, C.J. Helfrich, D. Berenson, A. Collet, R. Diankov, G. Gallagher, G. Hollinger, J. Kuffner, and M.V. Weghe. HERB: A Home Exploring Robotic Butler. *Autonomous Robots*, 28(1):5–20, 2010.

[47] P. Yang, R.A. Freeman, G.J. Gordon, K.M. Lynch, S.S. Srinivasa, and R. Sukthankar. Decentralized estimation and control of graph connectivity for mobile sensor networks. *Automatica*, 46(2):390–396, 2010.

[48] S.S. Siddhartha, R. Narasimha, A.J. Basu, and S.V. Kailas. Coherent structures in numerically simulated jets with and without off-source heating. *Fluid Dynamics Research*, 26(2):105–117, 2000.

Refereed Conferences

[49] H. Lin, X. Huang, T. Phan-Minh, D.S. Hayden, H. Zhang, D. Zhao, S.S. Srinivasa, E.M. Wolff, and H. Chen. Causal composition diffusion model for closed-loop traffic generation. In *IEEE Conference on Computer Vision and Pattern Recognition*, 2025.

[50] Amal Nanavati, Ethan K Gordon, Taylor A Kessler Faulkner, Yuxin (Ray) Song, Johnathan Ko, Tyler Schrenk, Vy Nguyen, Bernie Hao Zhu, Haya Bolotski, Atharva Kashyap, Sriram Kutty, Raida Karim, Liander Rainbolt, Rosario Scalise, Hanjun Song, Ramon Qu, Maya Cakmak, and Siddhartha S Srinivasa. Lessons learned from designing and evaluating a robot-assisted feeding system for out-of-lab use. In *ACM/IEEE International Conference on Human-Robot Interaction*, 2025. https://robotfeeding.io/publications/hri25a/.

[51] Abhay Deshpande, Ke Liyiming, Quinn Pfeifer, Abhishek Gupta, and Siddhartha Srinivasa. Data efficient behavior cloning for fine manipulation via continuity-based corrective labels. In *IEEE/RSJ International Conference on Intelligent Robots and Systems*, 2024.

[52] Liyiming Ke*, Yunchu Zhang*, Abhay Deshpande, Abhishek Gupta, and Siddhartha Srinivasa. CCIL: Continuity-based Data Augmentation for Corrective Imitation Learning. In *International Conference on Learning Representations*, 2024.

[53] M. Schmittle, R. Baijal, B. Hou, S. Srinivasa, and B. Boots. Multi-sample long range path planning under sensing uncertainty for off-road autonomous driving. In *IEEE International Conference on Robotics and Automation*, 2024.

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Reports and Theses

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Seminars

Keynote @ International Conference on Automated Planning and Scheduling	2022
Carnegie Mellon University	2022
MIT	2020
Army Research Laboratories	2019
Carnegie Mellon University	2019
Northwestern	2018
Toyota Technological Institute at Chicago	2018
Georgia Tech	2018
Amazon	2018
Microsoft Research	2017
Carnegie Mellon	2017
Princeton	2017
University of Washington	2017
Harvard	2016
MIT	2016
National University of Singapore	2014
University of Pennsylvania	2011
National Taiwan University	2010
Indian Institute of Technology Madras	2010
West Penn Hospital	2007

Others: Too numerous to count.

Teaching

CSE 478 Autonomous Robotics Winter 2017-
Paul G. Allen School for Computer Science & Engineering
Brand new undergraduate-level robotics course on robotics in the real world. The course covers state estimation (particle filters, motion models, sensor models etc), planning/control (search based planners, lattice based planners, trajectory following techniques etc), and perception and learning (object detection, learning from demonstrations etc.). Student teams implement algorithms on the RACECAR platform developed by Prof. Srinivasa for the course.

CSE 599 Advanced Robotics Fall 2017
Paul G. Allen School for Computer Science & Engineering
Brand new graduate-level robotics course on motion planning algorithms. The course covers the Piano Movers Problem, sampling-based planning, minimum dispersion graphs, efficient search, lazy and anytime planning, planning under uncertainty with application to mobile manipulators and humanoid robots, with a focus on algorithmic foundations and theorem proving.

16-843 Manipulation Algorithms Fall 2012-16
The Robotics Institute, Carnegie Mellon University
Brand new graduate-level robotics course on the theory and algorithms that enable robots to physically manipulate their world. The course covers the geometry of manipulation configuration spaces, motion planning in these spaces, synthesizing robust and stable grasps for dexterous hands, reconfiguring clutter, task-level planning of multi-stage manipulation, physics-based actions, and addressing perception and model uncertainty, with application to mobile manipulators and humanoid robots.

16-662 Robot Autonomy Spring 2012-16
The Robotics Institute, Carnegie Mellon University
Brand new graduate-level robotics course on manipulation, motion planning, perception, navigation, and machine learning algorithms for mobile manipulators. The course covers theory and algorithms, and has a strong hands-on component where students implement their assignments and class projects on a real mobile manipulation platform.

16-741 Mechanics of Manipulation Spring 2009
The Robotics Institute, Carnegie Mellon University
Co-taught with Matt Mason
Graduate-level robotics core course on model-based robotic manipulation. To develop techniques for rigid body mechanics, kinematic constraint, Coulomb friction, gravity, and impact, and apply these techniques to manipulation problems including picking and placing, parts orienting, assembly, and mobile manipulation.

Professional Activities

Board Member	Robotics: Science and Systems Foundation	2016-
Board Member	International Journal of Robotics Research (IJRR)	2023-
Editor	International Journal of Robotics Research (IJRR)	2014-2022
Editor	IEEE/RSJ IROS	2014-2016
Editor	A Roadmap for U.S. Robotics: From Internet to Robotics	2013
Guest Editor	IJRR, RSS Special Issue	2013
Guest Editor	Autonomous Robots, RSS Special Issue	2013
Guest Editor	IEEE RAM, Special Issue on Mobile Manipulation	2012
Associate Editor	IEEE/RSJ IROS	2011-2012
Associate Editor	IEEE ICRA	2010-2013

Selected Organization

Organizer	UW CSE MSR Summer Institute on Social Robotics	2018
General Chair	Robotics: Science and Systems (RSS)	2018
Program Chair	Robotics: Science and Systems (RSS)	2017
Organizer	Dagstuhl Seminar on Multimodal Manipulation Under Uncertainty	2015
Presentations Chair	IEEE IROS	2014
Chair	IEEE ICRA Best Manipulation Paper Award Committee	2013
Publications Chair	RSS	2013
Founding Program Chair	Robotics Track AAAI	2012-2013
Senior Program Committee	AAAI	2012-2013
Founding Chair	IEEE RAS Technical Committee on Mobile Manipulation	2010-2012
Short Presentations Chair	RSS	2012
Area Chair	RSS	2011-2012

Workshops Organized: Too numerous to count.

Long-term Program Committees: International Conference on Human-Robot Interaction (HRI), International Conference on Automated Planning and Scheduling (ICAPS), Robotics: Science and Systems (RSS), Workshop on the Algorithmic Foundations of Robotics (WAFR), AAAI Special Track on Physically Grounded AI.

University Service

Member	UW CSE Undergraduate Admissions Committee	2022-
Member	UW CSE Graduate Admissions Committee	2017-2022
Member	RI Curriculum Program Committee	2015-2017
Member	RI Faculty Hiring Committee	2015-2017
Chair	SCS ACM Doctoral Dissertation Award Committee	2014
Chair	RI Admissions Committee	2014
Member	RI Director Search Committee	2014
Member	SCS Student Teaching Award Committee	2014
Member	SCS Graduate Fellowship Committee	2012-2014
Member	RI Admissions Committee	2012-2015
Member	QoLT Director Search Committee	2012

Grants (excludes unrestricted gifts)

National Science Foundation (#0646448) — William Townsend-2009
Methodology for Applying Haptic Robotics to Agile Manufacturing — co-PI, PI: 99,785
””Small Business Phase II

””Defense Advanced Research Projects Agency (#DARPA-BAA-12-39)”” — Tony Stenz-2012
CHIMP: the CMU Highly Intelligent Mobile Platform — co-PI, PI: 000””
Robotics Challenge Track A

””Office of Naval Research (#ONR N00014-24-S-B001)”” — 2024-2027
Learning Multi-Step Dexterous Bimanual Fine Manipulation for Shipboard Maintenance and Urban Exploration — PI
Long Range BAA for Navy and Marine Corps Science and Technology

Amazon — 2024-2025
Leveraging the Common-Sense of Large Language Models for Robotic Manipulation — PI
Amazon Science Hub Research Award

Defense Advanced Research Projects Agency (#HR0011-23-C-0150) — 2023-2025
Aggressive, Resilient, High-speed Navigation in Off-road Terrain — co-PI, PI: Byron Boots
Robotic Autonomy in Complex Environments with Resiliency

””National Science Foundation (#2132848)”” — 2022-2025
Towards Efficient, Safe, and Personalized Caregiving Robots — PI
National Robotics Initiative

””Office of Naval Research (#ONR N00014-22-1-2593)”” — 2022-2023
SquadBot v2: High Performance Humanoid Robot for Urban Exploration — co-PI, PI: IHMC
Long Range BAA for Navy and Marine Corps Science and Technology

””National Science Foundation (#2007011)”” — 2020-2023
A Formalism for Robot-Assisted Feeding while Adjusting to User Preferences — PI
Human-Centered Computing

National Science Foundation (#1839371) — 2018-2021
Safe Imitation Learning for Robotics — co-PI, PI: Zaid Harchaoui
Division of Mathematical Sciences, the Division of Computing and Communication Foundations

""Office of Naval Research (#ONR N00014-16-R-BA01)"" 2017-2020
Enabling dexterous physics-based manipulation via a learning framework for shared autonomy PI
Long Range BAA for Navy and Marine Corps Science and Technology

National Science Foundation (#1748582) 2017-2019
Learning Deep Sensorimotor Policies for Shared Autonomy co-PI, PI: Sergey Levine
National Robotics Initiative

Robotics Collaborative Technology Alliance 2017-2018
Robust Outdoor Mobile Manipulation PI
T3

Amazon 2017-2018
Data Efficient Policy Search for Reinforcement Learning PI
Amazon Research Award

Richard King Mellon Foundation 2016-2017
Intelligent asisstive technology for individuals with physical disabilities PI
Research Award

""National Science Foundation (#1544797)"" 2015-2018
Learning control sharing strategies for assistive cyber-physical systems co-PI, PI: Brenna Argall
Cyber-Physical Systems

Defense Advanced Research Projects Agency 2015-2016
An Architecture for Shared Autonomy via Optimal Control PI
Simplifying Complexity in Scientific Discovery (SIMPLEX)

National Science Foundation (#1409003) 2014-2018
The Foundations of a Manipulation Repertoire co-PI, PI: Matt Mason
Robust Intelligence, Division of Information & Intelligent Systems

""National Institute of Health R01 (#R01EB019335)"" 2014-2017
A Formalism for Customizing and Training Intelligent Assistive Devices co-PI, PI: Brenna Argall
Smart and Connected Health

Office of Naval Research (#ONR BAA 13-0001) 2014-2017
Mental Simulation of Intentions for Collaborative Human-Robot Learning and Planning co-PI, PI: Andrea Thomaz
ONR Basic Research Challenges in the Science of Autonomy

Toyota 2013-2017
Physics-based Intelligent Manipulation in Clutter PI
Toyota Motor Engineering & Manufacturing

ABB 2013-2014
In-hand manipulation with a simple gripper co-PI, PI: Matt Mason
Research Grant

Research for Advanced Manufacturing in Pennsylvania 2013-2014
Robotics-enhanced, Cost-effective Motion Test Equipment for Inertial MEMS Devices co-PI, PI: David Bourne
Research Grant

Office of Naval Research 2012-2015
Enabling Advanced Autonomous Physical Manipulation Capabilities for Robots in Human-Robot Teams PI
Young Investigator Award (ONR-YIP)

Intel — 2012-2014
Lifelong Learning in the Real World — PI
Embedded Computing Science and Technology Center

””National Science Foundation (#1208388)”” — 2012-2013
Addressing Clutter and Uncertainty for Robotic Manipulation in Human Environments — PI
National Robotics Initiative

National Science Foundation (#1228906) — 2012-2013
Building Intelligent Mobile Manipulators for Assistive Care — co-PI, PI: Matt Mason
Robust Intelligence, Division of Information & Intelligent Systems

Defense Advanced Research Projects Agency (#DARPA-BAA-10-28) — 2011-2013
ANDY: Learning for Autonomous Robotic Manipulation — co-PI, PI: Drew Bagnell
Autonomous Robotic Manipulation Software Track

Defense Advanced Research Projects Agency (#DARPA-BAA-10-28) — 2010-2011
REARM: Robust Extensible Autonomous Robotic Manipulation — co-PI, PI: SRI
Autonomous Robotic Manipulation Software Track

National Science Foundation (#0916557) — 2009-2013
A Simple but General Hand — co-PI, PI: Matt Mason
Robust Intelligence, Division of Information & Intelligent Systems

National Science Foundation (#0540865) — 2006-2016
Quality of Life Technology Engineering Research Center — co-PI, PI: Takeo Kanade
Engineering Research Centers

HONDA — 000””-
Formalizing Mathematical Models of Curiosity — co-PI, PI: 700
HONDA Research Institute

US Army Research Laboratory — ””150-000””
Safe, Fluent, and Generalizable Outdoor Autonomy — co-PI, PI: and Resilient Autonomy””
””Scalable

Selected Press Coverage (Longer list)

Amazon robotics leader leaves to join self-driving vehicle venture Cruise	GeekWire, 2023
New Science Hub to launch at Univ. of Washington with $1.9M from Amazon	GeekWire, 2022
Warehouse Robotics Provider Berkshire Grey to Go Public Through $2.7B SPAC Deal	Wall Street Journal, 2021
These Small Cars Can Help Drive the Autonomous Future	Wired, 2019
Robot arm can feed people with mobility issues	BBC News, 2019
The best interactive design of the year	Fast Company, 2019
Amazon hires top UW computer science prof as new robotics director	GeekWire, 2018
UW's HERB robot makes cameo on X-Files as automated sushi waiter	GeekWire, 2018
Learning to love our robot co-workers	New York Times, 2017
Robotics expert moves entire team to UW, including famous Oreo-cracking robot	GeekWire, 2017
Come on, Let's Give the Robots Hands Already	Wired, 2016
Uber Would Like to Buy Your Robotics Department	New York Times, 2015
Robots 3D IMAX Movie	National Geographic, 2014
HERB: A robot that can unload a dishwasher and (sometimes) take apart an Oreo	Washington Post, 2014
Going Deep with David Rees: How to open a door	National Geographic, 2014
Robots that Care: The QoLT Center Changing the World of Caregiving	NPR, 2014
Helper Robots Are Steered, Tentatively, to Care for the Aging	New York Times, 2013

When it's too hard to separate Oreos ...	CNN, 2013
HERB the Robot Butler Microwaves Your Dinner For You	Popular Science, 2012
What I think about when I think about robots	Granta, 2009
Can Robots Be Programmed to Learn from Their Own Experiences?	Scientific American, 2009

Extracurricular

- 140/13,072=0.01-th Place overall and 12/790=0.01-th Place in age group, Pittsburgh Half Marathon, 2017
- 6th Place overall and 1st Place in age group, Montour Trail Half Marathon, 2016
- 3rd Place, Finish MS 5M Run, 2015
- Fastest advisor-student time, Random Distance Run, 2013
- LaSalle Bank Chicago Marathon 2007, 2008
- Pittsburgh AB Squash League champion 2005
- Pittsburgh C Squash League champion 2002
- Institute silver medalist in Badminton, Indian Institute of Technology Madras 1998
- Institute bronze medalist in Tennis, Indian Institute of Technology Madras 1997, 1998