# Prof. Siddhartha Srinivasa


The Personal Robotics Lab
Paul G. Allen School of Computer Science & Engineering
University of Washington
185 E Stevens Way NE
Seattle, WA - 98195

PHONE: (412) 973 9615
TWITTER: @siddhss5
EMAIL: siddh@cs.uw.edu
WWW: https://goodrobot.ai
ADMIN: Lisa Merlin (lmerlin@cs.washington.edu)


## Employment

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

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|---|---|
| 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 |

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| 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 | 2008 |
| Intel Research Pittsburgh Lab Research Awards | 2006-07 |
| Jawaharlal Nehru Summer Research Fellowship, Indian Institute of Science | 1997-98 |
| Rajiv Gandhi Award for Best Summer Research Fellow, Indian Institute of Science | 1997-98 |
| Indian National Mathematics Olympiad | 1994 |

## Mentoring

### Current Ph.D. Students

| | |
|---|---|
| Ethan Pronovost | 2024- |
| Yunchu Zhang (+Abhishek Gupta) | 2023- |
| Sidharth Talia | 2022- |
| Helen Wang (+Dieter Fox) | 2022- |

### Alumni - Postdoctoral Fellows

| | |
|---|---|
| Taylor Kessler Faulkner | 2022-2024<br>Lecturer @ University of Washington |
| Christoforos Mavrogiannis | 2019-2023<br>Assistant Professor @ Michigan |
| Sanjiban Choudhury | 2018-2019<br>Assistant Professor @ Cornell |
| Matthew Barnes | 2018-2019<br>Researcher @ Google |
| Tapomayukh Bhattacharjee | 2017-2021<br>Assistant Professor @ Cornell |
| Oren Salzman | 2016-2019<br>Assistant Professor @ Technion |
| Daqing Yi | 2016-2018<br>Researcher @ Google |
| Henny Admoni | 2015-2017<br>Assistant Professor @ CMU |
| Aaron Johnson | 2015-2016<br>Assistant Professor @ CMU |
| Prasanna Velagapudi | 2012-2014<br>CTO @ Agility |

### Alumni - Ph.D.

| | |
|---|---|
| Amal Nanavati (+Maya Cakmak)<br>*Towards In-Home Deployments of Physically Assistive Robots: Insights from Robot-Assisted Feeding for People with Motor Impairments* | 2019-2025<br>Researcher @ Zoox |
| Matthew Schmittle<br>*Off-Road Navigation Under Sensing Uncertainty* | 2018-2025<br>Researcher @ Overland AI |
| Ethan Gordon<br>*Tractably Adaptable Food Manipulation for Robot-Assisted Feeding* | 2018-2024<br>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 @ Waymo

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

Samuel Ainsworth 2016-2022
*Perspectives on Policy Learning* Researcher @ Waymo

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* Director of Robot Perception @ Robotics and AI Institute

Zita Marinho (+Geoff Gordon) 2012-2018
*Moment-based Algorithms for Structured Prediction* Research Scientist @ DeepMind

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

Matt Klingensmith (+Michael Kaess) 2013-2016
*Tracking and Calibrating Robot Arms using SLAM Techniques* Autonomy Engineer @ Wayve

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

Michael Koval (+Nancy Pollard) 2012-2016
*Robust Manipulation via Contact Sensing* Researcher @ 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.**

Atharva Pradhan — 2023-2025
*Insights from Developing a Robotic Bimanual Manipulation System* — Engineer @ Third Wave Automation

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* — AI Software Engineer @ Google Research

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* — Postdoc @ Harvard

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*

**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 |

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|---|---|
| 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 |

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|---|---|
| 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.

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**Refereed Conferences**

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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)

Robotics pioneer Sidd Srinivasa on the 'last mile problem,' humanoid hype, and why he's joining Madrona GeekWire, 2025
Why Cruise AVs want everyone to win on the road LinkedIn, 2023
Amazon robotics leader leaves to join self-driving vehicle venture Cruise GeekWire, 2023
Robotics Expert Sidd Srinivasa on Trends and What's Ripe for Innovation Madrona, 2022
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
Siddhartha Srinivasa and Tao Xie named Fellows of the IEEE Allen School News, 2017
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

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| 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