

# Christoforos Mavrogiannis

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Last update: Dec. 5, 2023

## EMPLOYMENT

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### Assistant Professor

Aug. 2023 - Present

University of Michigan (UM), Ann Arbor, MI, USA

Department of Robotics

### Postdoctoral Research Associate

July 2019 - July 2023

University of Washington (UW), Seattle, WA, USA

Paul G. Allen School of Computer Science & Engineering (CSE)

Personal Robotics Lab (PI: Siddhartha S. Srinivasa)

## EDUCATION

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### Ph.D., Cornell University

May 2019

Sibley School of Mechanical & Aerospace Engineering

Thesis title: "Motion Planning for Socially Competent Robot Navigation"

Advisor: Ross A. Knepper

### M.S., Cornell University

Jan. 2017

Sibley School of Mechanical & Aerospace Engineering

Concentrations: Dynamics & Control, Artificial Intelligence, Cognitive Studies

### Diploma (B.S./M.S.), National Technical University of Athens

March 2013

School of Mechanical Engineering

Thesis title: "Grasp Synthesis Algorithms for Multifingered Robot Hands"

Advisor: Kostas J. Kyriakopoulos

## SELECTED HONORS & AWARDS

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**Participant, New Faculty Highlights Program, AAAI Conference on Artificial Intelligence** 2024

Consortium highlighting the research of selected, recently appointed faculty in AI.

**Participant, Aspiring PIs Workshop, NSF FRR/NRI Meeting** 2023

Selective workshop discussing NSF's FRR/NRI funding programs with young PIs.

**Young Researcher, 9th Heidelberg Laureate Forum** 2022

Forum connecting 200 selected young researchers with Laureates from computer science and mathematics.

**Participant, Dagstuhl Seminar 19411: Social Agents for Teamwork and Group Interactions** 2019

By-invitation seminar featuring experts from multiagent systems, AI, and HRI [51].

**Postdoc Travel Award, Paul G. Allen School of Computer Science & Engineering** 2019, 2022

**Most Ethical Design Prize, Lean Startup Machine Challenge, BMW Summer School** 2018

**Best Paper Finalist, ACM/IEEE International Conference on Human-Robot Interaction** 2017

Finalist in the Technical Advances category for "Implicit Communication in a Joint Action" [23].

**Travel Grant, Cornell University Graduate School** 2x2017, 2018

**"R:SS Pioneer", Robotics: Science and Systems (R:SS)** 2018

Participant in the highly selective (38%) R:SS Pioneers doctoral consortium.

**"HRI Pioneer", ACM/IEEE International Conference on Human-Robot Interaction** 2017

Participant in the highly selective (31%) HRI Pioneers doctoral consortium.

Travel Grant, International Workshop on the Algorithmic Foundations of Robotics	2016
2nd Place (\$10k) at the Hackaday Prize for <b>Openbionics</b> (2nd out of 900 projects)	2015
1st Place (SEK 110k) at the Robotdalen International Innovation Award for <b>Openbionics</b>	2015
Ph.D. Fellowship, Sibley School of Mechanical & Aerospace Engineering, Cornell University	2013
Award for Scientific Publications, Thomaidion Institution, NTUA	2013
Greece Finalist, European Board of Engineering Students of Technology Competition	2012
2nd Prize, NTUA Innovative Design Competition	2011
Summer Internship, <b>Hydron Unipress</b> , Łódź, Poland	2011
Funded by the International Association for the Exchange of Students for Technical Experience (IAESTE).	

## PUBLICATIONS

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### Peer-Reviewed Journal Articles

- [1] **C. Mavrogiannis**, K. Balasubramanian, S. Poddar, A. Gandra, and S. S. Srinivasa. “Winding Through: Crowd Navigation via Topological Invariance”. In: *IEEE Robotics and Automation Letters (RA-L)* 8.1 (2023), pp. 121–128.
- [2] **C. Mavrogiannis**, F. Baldini, A. Wang, D. Zhao, P. Trautman, A. Steinfeld, and J. Oh. “Core Challenges of Social Robot Navigation: A Survey”. In: *ACM Transactions on Human-Robot Interaction* (2023).
- [3] **C. Mavrogiannis**, J. DeCastro, and S. S. Srinivasa. “Abstracting Road Traffic via Topological Braids: Applications to Traffic Flow Analysis and Distributed Control”. In: *The International Journal of Robotics Research* (2023). [[Invited submission](#)].
- [4] **C. Mavrogiannis**, P. Alves-Oliveira, W. Thomason, and R. A. Knepper. “Social Momentum: Design and Evaluation of a Framework for Socially Competent Robot Navigation”. In: *ACM Transactions on Human-Robot Interaction* 11.2 (2022), pp. 1–37.
- [5] **C. Mavrogiannis** and R. A. Knepper. “Hamiltonian coordination primitives for decentralized multiagent navigation”. In: *The International Journal of Robotics Research* 40.10-11 (2021), pp. 1234–1254. [[Invited submission](#)].
- [6] **C. Mavrogiannis** and R. A. Knepper. “Multi-agent path topology in support of socially competent navigation planning”. In: *The International Journal of Robotics Research* 38.2-3 (2019), pp. 338–356. [[Invited submission](#)].

### Book Chapters

- [7] **C. Mavrogiannis** and R. A. Knepper. “Decentralized Multi-Agent Navigation Planning with Braids”. In: *Algorithmic Foundations of Robotics XII: Proceedings of the Twelfth Workshop on the Algorithmic Foundations of Robotics*. Ed. by K. Goldberg, P. Abbeel, K. Bekris, and L. Miller. Cham: Springer International Publishing, 2020, pp. 880–895.
- [8] **C. Mavrogiannis** and R. A. Knepper. “Multi-agent Trajectory Prediction and Generation with Topological Invariants Enforced by Hamiltonian Dynamics”. In: *Algorithmic Foundations of Robotics XIII*. Ed. by M. Morales, L. Tapia, G. Sánchez-Ante, and S. Hutchinson. Cham: Springer International Publishing, 2020, pp. 744–761.

### Peer-Reviewed Conference Proceedings

- [9] S. Poddar, **C. Mavrogiannis**, and S. S. Srinivasa. “From Crowd Motion Prediction to Robot Navigation in Crowds”. In: *Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*. 2023.
- [10] S. Talia, A. Thareja, **C. Mavrogiannis**, M. Schmittle, and S. S. Srinivasa. “PuSHR: A Multirobot System for Nonprehensile Rearrangement”. In: *Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*. 2023.

- [11] P. Lancaster, P. Gyawali, **C. Mavrogiannis**, S. S. Srinivasa, and J. R. Smith. “Optical Proximity Sensing for Pose Estimation During In-Hand Manipulation”. In: *Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*. 2022.
- [12] **C. Mavrogiannis**, J. DeCastro, and S. S. Srinivasa. “Analyzing Multiagent Interactions in Traffic Scenes via Topological Braids”. In: *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA)*. 2022.
- [13] **C. Mavrogiannis**, J. DeCastro, and S. S. Srinivasa. “Implicit Multiagent Coordination at Uncontrolled Intersections via Topological Braids”. In: *Proceedings of the International Workshop on the Algorithmic Foundations of Robotics (WAFR)*. 2022.
- [14] A. Nanavati, N. Walker, L. Taber, **C. Mavrogiannis**, L. Takayama, M. Cakmak, and S. S. Srinivasa. “Not All Who Wander Are Lost: A Localization-Free System for In-The-Wild Mobile Robot Deployments”. In: *Proceedings of the ACM/IEEE International Conference on Human-Robot Interaction (HRI)*. 2022. [Acceptance 24.8%].
- [15] A. Nanavati, **C. Mavrogiannis**, K. Weatherwax, L. Takayama, M. Cakmak, and S. S. Srinivasa. “Modeling Human Helpfulness with Individual and Contextual Factors for Robot Planning”. In: *Proceedings of Robotics: Science and Systems (R:SS)*. 2021. [Acceptance 27%].
- [16] N. Walker, **C. Mavrogiannis**, S. S. Srinivasa, and M. Cakmak. “Influencing Behavioral Attributions to Robot Motion During Task Execution”. In: *Proceedings of the Conference on Robot Learning (CoRL)*. 2021. [Acceptance 38.25%].
- [17] A. Wang, **C. Mavrogiannis**, and A. Steinfeld. “Group-based Motion Prediction for Navigation in Crowded Environments”. In: *Proceedings of the Conference on Robot Learning (CoRL)*. 2021. [Top 6.5%].
- [18] L. Ke, A. Kamat, J. Wang, T. Bhattacharjee, **C. Mavrogiannis**, and S. S. Srinivasa. “Tele-manipulation with Chopsticks: Analyzing Human Factors in User Demonstrations”. In: *Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*. 2020, pp. 11539–11546.
- [19] J. Roh, **C. Mavrogiannis**, R. Madan, D. Fox, and S. Srinivasa S. “Multimodal Trajectory Prediction via Topological Invariance for Navigation at Uncontrolled Intersections”. In: *Proceedings of the Conference on Robot Learning*. 2020. [Acceptance 34%].
- [20] **C. Mavrogiannis**, A. M. Hutchinson, J. Macdonald, P. Alves-Oliveira, and R. A. Knepper. “Effects of Distinct Robot Navigation Strategies on Human Behavior in a Crowded Environment”. In: *Proceedings of the ACM/IEEE International Conference on Human-Robot Interaction (HRI)*. 2019, pp. 421–430. [Acceptance 24%].
- [21] **C. Mavrogiannis** and R. A. Knepper. “Multi-agent Trajectory Prediction and Generation with Topological Invariants Enforced by Hamiltonian Dynamics”. In: *Proceedings of the International Workshop on the Algorithmic Foundations of Robotics (WAFR)*. 2018.
- [22] **C. Mavrogiannis**, W. B. Thomason, and R. A. Knepper. “Social Momentum: A Framework for Legible Navigation in Dynamic Multi-Agent Environments”. In: *Proceedings of the ACM/IEEE International Conference on Human-Robot Interaction (HRI)*. 2018, pp. 361–369. [Acceptance 23%].
- [23] R. A. Knepper, **C. Mavrogiannis**, J. Proft, and C. Liang. “Implicit Communication in a Joint Action”. In: *Proceedings of the 2017 ACM/IEEE International Conference on Human-Robot Interaction (HRI)*. 2017, pp. 283–292. [Best paper finalist][Acceptance 24%].
- [24] **C. Mavrogiannis**, V. Blukis, and R. A. Knepper. “Socially Competent Navigation Planning by Deep Learning of Multi-Agent Path Topologies”. In: *Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*. 2017, pp. 6817–6824.
- [25] **C. Mavrogiannis** and R. A. Knepper. “Decentralized Multi-Agent Navigation Planning with Braids”. In: *Proceedings of the International Workshop on the Algorithmic Foundations of Robotics (WAFR)*. 2016.
- [26] G. P. Kontoudis, M. V. Liarokapis, A. G. Zisimatos, **C. Mavrogiannis**, and K. J. Kyriakopoulos. “Open-source, anthropomorphic, underactuated robot hands with a selectively lockable differential mechanism: Towards affordable prostheses”. In: *Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*. 2015, pp. 5857–5862.
- [27] **C. Mavrogiannis**, M. V. Liarokapis, and K. J. Kyriakopoulos. “Quantifying Anthropomorphism of Robot Arms”. In: *Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*. 2015, pp. 4084–4089.

- [28] **C. Mavrogiannis**, C. P. Bechlioulis, M. V. Liarokapis, and K. J. Kyriakopoulos. “Task-Specific Grasp Selection for Underactuated Hands”. In: *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA)*. 2014, pp. 3676–3681.
- [29] A. G. Zisimatos, M. V. Liarokapis, **C. Mavrogiannis**, and K. J. Kyriakopoulos. “Open-source, affordable, modular, light-weight, underactuated robot hands”. In: *Proceedings of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*. 2014, pp. 3207–3212.
- [30] **C. Mavrogiannis**, C. P. Bechlioulis, and K. J. Kyriakopoulos. “Sequential Improvement of Grasp based on Sensitivity Analysis”. In: *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA)*. 2013, pp. 1094–1099. [Acceptance 39%].

## Peer-Reviewed Workshop Papers

- [31] **C. Mavrogiannis** and S. S. Srinivasa. “Experimental Insights from Developing Mobile Robots for Long-term Indoor Deployments”. In: *Workshop on Lifelong Learning and Personalization in Long-Term Human-Robot Interaction*. IEEE/ACM International Conference on Human-Robot Interaction (HRI). 2023.
- [32] S. Poddar, **C. Mavrogiannis**, and S. S. Srinivasa. “From Crowd Motion Prediction to Robot Navigation in Crowds”. In: *Social Robot Navigation: Advances and Evaluation*. IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS). 2023.
- [33] N. Walker, **C. Mavrogiannis**, S. S. Srinivasa, and M. Cakmak. “Influencing Behavioral Attributions to Robot Motion During Task Execution”. In: *Towards Curious Robots: Modern Approaches for Intrinsically-Motivated Intelligent Behavior*. IEEE International Conference on Robotics and Automation (ICRA) Workshop. 2021.
- [34] **C. Mavrogiannis**. “Social Collision Avoidance via Topological Inference”. In: *The Forgotten in HRI: Incidental Encounters with Robots in Public Spaces*. IEEE/ACM International Conference on Human-Robot Interaction (HRI). 2020.
- [35] G. Lee, **C. Mavrogiannis**, and S. S. Srinivasa. “Towards Effective Human-AI Teams: The Case of Collaborative Packing”. In: *Symposium on Artificial Intelligence for Human-Robot Interaction*. Association for the Advancement of Artificial Intelligence (AAAI) Fall Symposium Series. 2019.
- [36] **C. Mavrogiannis**. “Inferring and Expressing Intentions in Systems of Multiple Navigating Agents”. In: *Intelligent Cars in Digital Roads: Frontiers in Machine Intelligence*. BMW Summer School. 2018.
- [37] **C. Mavrogiannis**. “Online Multi-Agent Trajectory Generation for Adaptive Navigation Planning”. In: *Pioneers Workshop*. Robotics: Science and Systems Conference (R:SS). 2018. [Acceptance 38%].
- [38] **C. Mavrogiannis** and R. A. Knepper. “Decentralized Navigation Planning Using Multi-Agent Trajectory Prediction Governed by Hamiltonian Dynamics”. In: *Workshop on Multi-robot Perception-Driven Control and Planning*. IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS). 2018.
- [39] **C. Mavrogiannis**, V. Blukis, and R. A. Knepper. “Inferring Strategies of Avoidance: Towards Socially Competent Navigation in Human Environments”. In: *Workshop on Mathematical Models, Algorithms and Human-Robot Interaction*. Robotics: Science and Systems (R:SS). 2017.
- [40] **C. Mavrogiannis** and R. A. Knepper. “Designing Algorithms For Socially Competent Robotic Navigation”. In: *Proceedings of the Companion of the ACM/IEEE International Conference on Human-Robot Interaction (HRI)*. Pioneers Workshop. 2017, pp. 357–358. [Acceptance 31%].
- [41] **C. Mavrogiannis** and R. A. Knepper. “Decentralized Multi-Agent Navigation Planning with Braids”. In: *North East Robotics Colloquium (NERC)*. 2016.
- [42] **C. Mavrogiannis** and R. A. Knepper. “Interpretation and Communication of Pedestrian Intentions Using Braid Groups”. In: *Workshop on Intention Recognition in HRI*. ACM/IEEE International Conference on Human-Robot Interaction (HRI). 2016.
- [43] **C. Mavrogiannis** and R. A. Knepper. “Towards Socially Competent Navigation of Pedestrian Environments”. In: *Workshop on Social Trust in Autonomy*. Robotics: Science and Systems (R:SS). 2016.
- [44] M. V. Liarokapis, A. G. Zisimatos, **C. Mavrogiannis**, and K. J. Kyriakopoulos. “OpenBionics: An Open-Source Initiative for the Creation of Affordable, Modular, Light-Weight, Underactuated Robot Hands and Prosthetic Devices”. In: *Arizona State University Rehabilitation Robotics Workshop*. 2014.

## Theses

- [45] C. Mavrogiannis. “Motion Planning for Socially Competent Robot Navigation”. PhD thesis. Cornell University, 2019.
- [46] C. Mavrogiannis. “Grasp Synthesis Algorithms for Multifingered Robot Hands”. MA thesis. National Technical University of Athens, 2013.

## Preprints / Under Review

- [47] A. Mavrogiannis, C. Mavrogiannis, and Y. Aloimonos. “Cook2LTL: Translating Cooking Recipes to LTL Formulae using Large Language Models”. 2023. arXiv: [2310.00163 \[cs.R0\]](https://arxiv.org/abs/2310.00163). [Under review at: *IEEE International Conference on Robotics and Automation (ICRA)*].
- [48] P. Lancaster, C. Mavrogiannis, S. S. Srinivasa, and J. R. Smith. “Electrostatic Brakes Enable Individual Joint Control of Underactuated, Highly Articulated Robots”. 2021. arXiv: [2204.02460 \[cs.R0\]](https://arxiv.org/abs/2204.02460). [Under review at: *International Journal of Robotics Research*].

## Course Notes

- [49] R. A. Knepper, C. Mavrogiannis, J. Proft, and W. Thomason. *CS 4750/5750: Foundations of Robotics*. <https://rpal.cs.cornell.edu/foundations/>. [Online; accessed 13-Sept-2021]. 2016.

## Technical Reports

- [50] A. Ayub, M. Scheunemann, C. Mavrogiannis, J. Rhim, K. Dautenhahn, C. L. Nehaniv, V. V. Hafner, and D. Polani. “Robot Curiosity in Human-Robot Interaction (RCHRI)”. In: *Workshop in conjunction with the ACM/IEEE International Conference on Human-Robot Interaction (HRI)*. 2022, pp. 1231–1233.
- [51] C. L. Bethel, M. Bruijnes, M. Jung, C. Mavrogiannis, S. Parsons, C. Pelachaud, R. Prada, L. Riek, S. Strohkorb Sebo, J. Shah, E. Short, and M. Vázquez. “Working Group on Social Cognition for Robots and Virtual Agents”. In: Dagstuhl Seminar 19411. Schloss Dagstuhl – Leibniz-Zentrum für Informatik, Dagstuhl Publishing, 2020, pp. 21–36.
- [52] S. S. Srinivasa, P. Lancaster, J. Michalove, M. Schmittle, C. Summers, M. Rockett, J. R. Smith, S. Choudhury, C. Mavrogiannis, and F. Sadeghi. “MuSHR: A Low-Cost, Open-Source Robotic Racecar for Education and Research”. In: *CoRR* abs/1908.08031 (2019).
- [53] G. P. Kontoudis, M. V. Liarokapis, A. G. Zisimatos, C. Mavrogiannis, and K. J. Kyriakopoulos. *How to Create Affordable, Anthropomorphic, Personalized, Light-Weight Prosthetic Hands*. Tech. rep. National Technical University of Athens, 2015.
- [54] A. G. Zisimatos, M. V. Liarokapis, C. Mavrogiannis, G. P. Kontoudis, and K. J. Kyriakopoulos. *How to Create Affordable, Modular, Light-Weight, Underactuated, Compliant Robot Hands*. Tech. rep. National Technical University of Athens, 2015.

## TEACHING

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**Instructor, ROB 498/599: Computational Human-Robot Interaction**  
Department of Robotics, University of Michigan

Fall 2023

**Instructor, CSE 478: Autonomous Robotics**

Winter 2020

Paul G. Allen School of Computer Science & Engineering, University of Washington  
Attendance: 36, Average rating: 4.1/5.0

**Teaching Assistant, CS 4750/5750: Foundations of Robotics**  
Department of Computer Science, Cornell University

Fall 2016, Fall 2017

## MENTORING

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### University of Michigan

Jeeho Ahn	PhD Robotics, UM
Elvin Yang	PhD Robotics, UM
Andrew Stratton	MS Robotics, UM
Wensong Hu	MS Robotics, UM
Yanxi Lin	MS Robotics, UM
Sriram Priyadharshan	MS Robotics, UM
Manohar Bhat	MS Robotics, UM
Mo Xu	MS EECS, UM

### University of Washington

Helen Wang	PhD CS, UW		
Bernie Zhu	PhD CS, UW		
Allan Wang	PhD Robotics, CMU	coauthor [2, 17]	
Junha Roh	PhD CS, UW	coauthor [19]	now: Third Wave Automation
Amal Nanavati	PhD CS, UW	coauthor [14, 15]	
Nick Walker	PhD CS, UW	coauthor [14, 16]	
Patrick Lancaster	PhD CS, UW	coauthor [11, 48, 52]	now: Meta AI
Pratik Gyawali	MS ME, UW	coauthor [11]	now: Canvas Construction
Sriyash Poddar	BS Intern, IIT	coauthor [1, 9]	now: PhD in CSE, UW
Alex Lin	BS ACMS, UW		now: TerraClear
Liyiming Ke	PhD CS, UW	coauthor [18]	
Gilwoo Lee	PhD CS, UW	coauthor [35]	now: Zordi
Krishna Balasubramanian	MS ME, UW	coauthor [1]	now: Fox Robotics
Anush Gandra	MS ME, UW	coauthor [1]	now: May Mobility
Matthew Rockett	MS CS, UW	coauthor [52]	now: Zordi
Nikita Filippov	BS CS, UW		now: Amazon
Rishabh Madan	BS Intern, IIT	coauthor [19]	now: PhD in CS, Cornell
<b>MuSHR, UW</b>			
Arnav Thareja	BS CS, UW	coauthor [10]	
Akkshaj Singh	BS ECE, UW		now: Real-Time Innovations
Tudor Fanaru	BS CS, UW		
Sidharth Talia	BS Intern, GGSIPU	coauthor [10]	Now: PhD in CSE, UW
Adit Jha	BS ECE, UW		now: Microsoft
Alrick Dsouza	MS ME, UW		now: Nuro
Stefan Layanto	BS CS, UW		now: Lyft
Podshara Chanrungmaneeekul	BS CS, UW		now: MS in CS, Rice
<b>Cornell University</b>			
Alena Hutchinson	MEng CS, Cornell	coauthor [20]	now: Wanderlust Group
John Macdonald	BS CS, Cornell	coauthor [20]	now: Skydio
Joshua Lee	MEng CS, Cornell		now: Google
<b>OpenBionics Initiative</b>			
George Kontoudis	BS ME, NTUA	coauthor [26, 29]	now: Postdoc, UMD
Agisilaos Zisimatos	BS ECE, NTUA	coauthor [26, 29]	now: Libre Space Fnd.

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## SELECTED INVITED TALKS

“Towards harmonious robot mobility in the workplace”

Warren Cook Health and Safety Discussional, COHSE, University of Michigan

Oct. 2023

“Towards harmonious mobility in pedestrian environments”	
IROS workshop on Last-Mile Robotics	Sept. 2023
IROS workshop on Social Robot Navigation	May 2023
“Towards robots that navigate seamlessly next to people”	
Robotics Seminar, Cornell University	May 2023
ICRA workshop: Cognitive Modeling in Robot Learning for Adaptive Human-Robot Interactions	May 2023
“Building Robots that Humans Accept”	
Institute for Human-Machine Cognition	Feb. 2023
Samsung Research AI USA	Sept. 2022
Honda Research Institute USA	Sept. 2022
Robotics Department, University of Michigan	April 2022
Khoury College of Computer Sciences, Northeastern University	April 2022
Robotics Institute, School of Computer Science, Carnegie Mellon University	March 2022
Department of Computer Science, University of Southern California	March 2022
Department of Computer Science, Rutgers University	March 2022
Toyota Research Institute	March 2022
School of Computing & Augmented Intelligence, Arizona State University	Feb. 2022
“Spatial Interaction in Human-Robot Systems”	
Guest lecture for ROB 204: Introduction to Human-Robot Systems	Feb. 2023
“Navigation in Social Contexts”	
ICRA Tutorial: Learning Motion Control for Mobile Robot Navigation	May 2022
“Multiagent coordination: From multirobot pushing to robot navigation in crowds”	
Guest Lecture in EE P 545, taught by Prof. Joshua R. Smith, ECE UW	Nov. 2021
“Formalizing the Structure of Multiagent Domains for Autonomous Robot Navigation in Human Environments”	
Robotics Seminar, Cornell University	Sept. 2021
Kod*Lab, University of Pennsylvania	Aug. 2021
“UW-UCSC Capstone Demo for the Honda Curious Minded Machine Project: A Curious Robot Photographer”	
Honda Research Institute USA	Aug. 2021
“Leveraging Structure for Autonomous Robot Navigation in Multiagent Human Spaces”	
<a href="#">Talking Robotics</a>	May 2021
Intelligent Systems Lab, TU Berlin	April 2021
Workshop on ML for Mobile Robot Navigation in the Wild, AAAI Spring Symposium	March 2021
“Motion Planning for Socially Competent Robot Navigation”	
Honda Research Institute USA	July 2021
“Multiagent Trajectory Prediction & Generation with Topol. Invariants Enforced by Hamiltonian Dynamics”	
Robotics Seminar, Cornell University	Nov. 2021
“Socially Competent Robot Navigation”	
Robotics Colloquium, University of Washington	Oct. 2018
GAIPS Seminar, Instituto Superior Técnico, Lisbon Portugal	Nov. 2018
“Socially Competent Navigation Planning by Deep Learning of Multi-Agent Path Topologies”	
AI Seminar, Cornell University	Sept. 2017
“Decentralized Multi-Agent Navigation Planning with Braids”	
Robotics Seminar, Cornell University	Dec. 2017

## FUNDING

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### Current

<i>Office of Naval Research</i>	2022-2026
<i>SquadBot v2: High Performance Humanoid Robot for Urban Exploration</i>	\$3,000,000
Co-author of the proposal. PIs: Siddhartha Srinivasa (UW), Robert Griffin (IHMC).	

## SERVICE

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### Proposal Evaluation

NSF Proposal Evaluation Panel 2021

### Workshops/Tutorials at International Conferences

*Learning Motion Control for Mobile Robot Navigation: A Tutorial* 2022

*IEEE International Conference on Robotics and Automation (ICRA)* Philadelphia, PA

I co-organized this tutorial together with Xuesu Xiao, Garrett Warnell, and Peter Stone.

*Robot Curiosity in HRI* 2022

*ACM/IEEE International Conference on Human-Robot Interaction (HRI)* Virtual

I co-organized this HRI 2022 workshop together with Ali Ayub, Marcus Scheunemann, Jimin Rhim, Verena Hafner, Chrystopher Nehaniv, Daniel Polani, and Kerstin Dautenhahn.

*Social Robot Navigation* 2021

*Robotics: Science and Systems (R:SS)* Virtual

I co-organized this R:SS 2021 workshop together with Pete Trautman, Francesca Baldini, Marynel Vázquez, Leila Takayama, and Siddhartha Srinivasa.

Attendance: 120

*Geometry and Topology in Robotics: Learning, Optimization, Planning, and Control* 2021

*Robotics: Science and Systems (R:SS)* Virtual

I co-organized this R:SS 2021 workshop together with Noémie Jaquier, Claire Liang, Leonel Rozo, Vasileios Vasilopoulos, Hans-Peter Schröcker, Søren Hauberg, Subhrajit Bhattacharya, Florian Pokorny, Siddhartha S. Srinivasa, and Suvrit Sra.

*Modern Approaches for Intrinsically-Motivated Intelligent Behavior* 2021

*IEEE International Conference on Robotics and Automation (ICRA)* Virtual

I co-organized this ICRA 2021 workshop together with Heni Ben Amor, Soshi Iba, David Isele, and Joshua Tenenbaum.

Attendance: 105

### Organizing Committee for International Conferences

Program Committee, ACM/IEEE International Conference on Human-Robot Interaction (HRI) 2024

Associate Editor, IEEE International Conference on Robotics and Automation (ICRA) 2024

Videos/Demos Chair, ACM/IEEE International Conference on Human-Robot Interaction (HRI) 2024

Co-chair, Session on Planning for Distributed and Multi-Robot Systems I, IEEE International Conference on Intelligent Robots and Systems (IROS) 2023

Program Committee, Undergraduate Consortium, AAAI Conference on Artificial Intelligence (AAAI) 2023

Program Committee, ACM/IEEE International Conference on Human-Robot Interaction (HRI) 2023

Website Chair, Conference on Robot Learning (CoRL) 2022

Co-chair, Session on Non-Holonomic Motion Planning and Theoretical Foundation, IEEE International Conference on Robotics and Automation (ICRA) 2022

Program Committee, International Joint Conference on Artificial Intelligence (IJCAI) 2021

Program Committee, International Symposium on Multi-Robot and Multi-Agent Systems (MRS) 2019

Program Committee, Pioneers Workshop, Robotics: Science and Systems (RSS) 2019

Program Committee, RoboNLP Workshop, NA Association on Computational Linguistics (NAACL) 2019

Program Committee, Pioneers Workshop, ACM/IEE International Conference on Human-Robot Interaction (HRI) 2019



## Reviewer

International Journal of Robotics Research (IJRR) · Journal of Artificial Intelligence (AIJ) · Journal of Artificial Intelligence (AIJ) · Robotics: Science and Systems (R:SS) · IEEE Transactions on Robotics (T-RO) · IEEE Robotics and Automation Magazine (RAM) · Journal of Field Robotics (JFR) · Transactions on Human-Robot Interaction (THRI) · Transactions on Automation Science and Engineering (T-ASE) · Frontiers in Robotics and AI · Robotics and Autonomous Systems · IEEE Transactions on Human-Machine Systems · Journal of Intelligent & Robotic Systems · International Journal of Social Robotics · European Journal of Control · Interaction Studies Journal · International Workshop on the Algorithmic Foundations of Robotics (WAFR) · ACM/IEEE International Conference on Human-Robot Interaction (HRI) · Conference on Robot Learning (CoRL) · ACM CHI Conference on Human Factors in Computing Systems · IEEE Robotics and Automation Letters (RA-L) · IEEE Transactions on Cognitive and Developmental Systems · IEEE International Conference on Robotics and Automation (ICRA) · IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) · IEEE International Symposium on Robot and Human Interactive Communication (RO-MAN) · International Conference on Social Robotics (ICSR) · International Symposium on Experimental Robotics (ISER) · Transactions on Human-Robot Interaction (THRI) · IEEE Mediterranean Conference on Control and Automation (MED) · IEEE/RAS International Conference on Humanoid Robots · IEEE RAS/EMBS International Conference on Biomedical Robotics and Biomechanics (BioRob) · IEEE International Conference on Automation Science and Engineering (CASE) · IEEE Conference on Advanced Robotics and its Social Impact (ARSO) · ACM/SIGGRAPH Conference on Motion, Interaction and Games (MIG) · AAI-HRI Fall Symposium Series: Artificial Intelligence for Human-Robot Interaction · IEEE Conference on Control Technology and Applications (CCTA) · International Symposium on Industrial Electronics (ISIE).

## Member of Ph.D. Examination Committee

Gal Gorjup, University of Auckland, New Zealand 2021

## Departmental Service

**Panel Discussion on Academic Job Search** 2022

*Paul G. Allen School of Computer Science & Engineering, University of Washington*  
Panelist among Allen School Professors and recent alumni that started faculty jobs.

**Reader, Ph.D. Admissions Committee** 2020

*Paul G. Allen School of Computer Science & Engineering, University of Washington*  
I was a volunteer reader of Ph.D. applications for the 2020 cycle, contributing more than 50 reviews.

**Covid Safety Lead for Robotics Labs** Sep. 2020 - April 2021

*Paul G. Allen School of Computer Science & Engineering, University of Washington*  
I co-developed and deployed a protocol that enabled robotics researchers to work safely and productively while respecting the Covid safety restrictions.

**Organization staff, NERC: Northeast Robotics Colloquium** 2016

*Sibley School of Mechanical & Aerospace Engineering, Cornell University*  
Student volunteer.

## Outreach

**Mentor, Mad Hacks: Fury Code Vehicle Cybersecurity Hackathon** 2021

National Security Innovation Network USA Virtual

I was a mentor on vehicle autonomy topics for more than 20 teams. [[link](#)]

## Demo Lead, Personal Robotics Lab

Feb. 2020

Annual Meeting of the American Association for the Advancement of Science (AAAS)

Seattle, WA

I led a team of 16 students and staff members from the Personal Robotics lab to present 4 interactive robotics demos to the general public at the Annual AAAS meeting.

## LEADERSHIP

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### UW Team Lead, *Curious Minded Machine (CMM)*

2019-2021

CMM (website: <https://cmm.usa.honda-ri.com>) was a multi-year, multi-institution (MIT, UPenn, UCSC, UW) project, funded by the Honda Research Institute USA focusing on the development of robots that curiously learn and interact with humans and their environments. As a team lead for the University of Washington team, I was in close contact with the Honda Research Institute, collaborated closely with coPIs Prof. Maya Cakmak of UW and Prof. Leila Takayama of the University of California Santa Cruz, mentored Ph.D. students, and managed the delivery of research projects, demos, and project deliverables.

### Research Mentor, *MuSHR: Multiagent System for nonHolonomic Racing*

2019-Present

MuSHR (website: <https://mushr.io>) is a research project on the development of an open-source, highly-performing autonomous robotic racecar. As a mentor, I have supervised more than 10 undergraduate and graduate students in carrying out quarter projects, and master's theses involving research, and engineering using the MuSHR racecar.

### Co-founder & Partner, Openbionics Initiative

2013-2015

Openbionics (website: <https://openbionics.org>) is an open-source Initiative for the development of low-cost hardware, primarily targeting robotic manipulation applications, such as robotic grasping. As part of the founding team, I conducted research, mentoring and management of open-source projects related to the design of robotic and prosthetic hands.

## SELECTED PRESS

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### All3DP (Reshared by NVIDIA Embedded Blog)

April 27 2023

MuSHR featured in The 20 Best Jetson Nano Projects of 2023. [\[link\]](#)

### National Public Radio of Greece (ERT)

Nov. 22 2022

Interview to the Voice of Greece radio show.

### Thales and friends

Oct. 18 2022

"Young Greek scientists in the Heidelberg Laureate Forum" [\[link\]](#); in Greek]

### Heidelberg Laureate Forum Spotlight Series Podcast

Sept. 6 2022

Interview about my path in robotics and AI. [\[link\]](#)

### IEEE Spectrum

July 14 2022

"Wandering robots in the wild": article discussing our HRI '22 paper [14]. [\[link\]](#)

### Toyota Research Institute Blog

June 1 2022

Blog post on our WAFR '22 paper [13]. [\[link\]](#)

### New Scientist

April 21 2022

"Electrostatic brakes make bendy robot arms a lot more efficient": Article on our braking work [48]. [\[link\]](#)

### technology.org

Oct. 1 2021

Blog post on our paper on topological analysis of multiagent traffic behavior [12]. [\[link\]](#)

### IEEE Spectrum Video Friday

Oct. 16 2020

Blog post featuring our Chopsticks robot [18]. [\[link\]](#)

### Wired

Oct. 5 2019

"These Small Cars Can Help Drive the Autonomous Future": article featuring MuSHR [52]. [\[link\]](#)

### Communications of the ACM

Aug. 27 2019

"Allen School Releases Robotic Race Car Platform to Drive Advances in AI Research, Education." [\[link\]](#)

### AI<sup>3</sup>|Theory, Practice, Business

Aug. 16 2019

“A Low-Cost, Open-Source Robotic Racecar for Education and Research.” <a href="#">[link]</a>	Aug. 26 2019
<b>Import AI</b>	
“Is it a bird? Is it a plane? No, it’s a MuSHR robocar!” <a href="#">[link]</a>	Aug. 21 2019
<b>GeekWire</b>	
“Robotic race car platform from Univ. of Washington designed to speed research around A.I.” <a href="#">[link]</a>	Aug. 21 2019
<b>Allen School News</b>	
“Allen School releases MuSHR robotic race car platform to drive advances in AI research and education.” <a href="#">[link]</a>	Jan. 19 2017
<b>Cornell Chronicle</b>	
“Humans must overcome distrust of robots”: article about our WAFR ’16 paper <a href="#">[25]</a> . <a href="#">[link]</a>	Dec. 27 2016
<b>ERT (Greece National Public TV network)</b>	
Interview about <a href="#">OpenBionics</a> at a morning news show. <a href="#">[link]</a> ; in Greek]	Nov. 5 2015
<b>3ders.org</b>	
“OpenBionics adds NFC ready fingers to 3D printed hand prosthetics for 2015 Hackaday Prize finals.” <a href="#">[link]</a>	Nov. 3 2015
<b>blog.atmel.com</b>	
“1:1 interview with Hackaday Prize finalist OpenBionics.” <a href="#">[link]</a>	Oct. 5 2015
<b>Hackaday.com</b>	
“10 finalist projects prove we can save the world.” <a href="#">[link]</a>	Sept. 2 2015
<b>Hackaday.com</b>	
“Hackaday Prize Semifinalist: OpenBionics Affordable Prosthetic Hands.” <a href="#">[link]</a>	Sept. 23 2015
<b>3dprint.com</b>	
“OpenBionics Affordable Bionic Hand is Selected as a Hackaday Prize Semifinalist.” <a href="#">[link]</a>	June 17 2015
<b>Hackaday.com</b>	
“Hackaday Prize Entry: OpenBionics.” <a href="#">[link]</a>	May 8 2015
<b>GoodNews.gr</b>	
“The most Affordable Prosthetic Hands will be made in Greece” [in Greek]	April 9 2015
<b>RoboHub.com</b>	
“OpenBionics prosthetic hands: Open source, affordable, lightweight, anthropomorphic.” <a href="#">[link]</a>	March 18 2015
<b>3ders.org</b>	
“Greek OpenBionics unveils affordable, light-weight 3D printed bionic hands with 144 grasp movements.” <a href="#">[link]</a>	March 18 2015
<b>3DPrint.com</b>	
“OpenBionics open source prosthetic hand can execute 144 different grasps & costs under 200.” <a href="#">[link]</a>	

## LANGUAGES

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<b>English</b>	Full Professional Proficiency
<b>Greek</b>	Full Professional Proficiency (Native)
<b>French</b>	Minimum Professional Proficiency (DALF C2 2010)