# Christoforos Mavrogiannis

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#### EMPLOYMENT

Assistant Professor University of Michigan (UM), Ann Arbor, MI, USA Department of Robotics	Aug. 2023 - Presen
<b>Postdoctoral Research Associate</b> University of Washington (UW), Seattle, WA, USA Paul G. Allen School of Computer Science & Engineering (CSE) Personal Robotics Lab (PI: Siddhartha S. Srinivasa)	July 2019 - July 202
EDUCATION	
<b>Ph.D., Cornell University</b> Sibley School of Mechanical & Aerospace Engineering Thesis title: "Motion Planning for Socially Competent Robot Navigation" Advisor: Ross A. Knepper	May 201
M.S., Cornell University Sibley School of Mechanical & Aerospace Engineering Concentrations: Dynamics & Control, Artificial Intelligence, Cognitive Studies	Jan. 201
Diploma (B.S./M.S.), National Technical University of Athens School of Mechanical Engineering Thesis title: "Grasp Synthesis Algorithms for Multifingered Robot Hands" Advisor: Kostas J. Kyriakopoulos SELECTED HONORS & AWARDS	March 201
Participant, New Faculty Highlights Program, AAAI Conference on Artificia Consortium highlighting the research of selected, recently appointed faculty in AL	l Intelligence 202
Participant, Aspiring PIs Workshop, NSF FRR/NRI Meeting Selective workshop discussing NSF's FRR/NRI funding programs with young PIs.	202
Young Researcher, 9th Heidelberg Laureate Forum Forum connecting 200 selected young researchers with Laureates from computer scien	202 ace and mathematics.
Participant, Dagstuhl Seminar 19411: Social Agents for Teamwork and Grou By-invitation seminar featuring experts from multiagent systems, AI, and HRI [55].	p Interactions 201
Postdoc Travel Award, Paul G. Allen School of Computer Science & Enginee Most Ethical Design Prize, Lean Startup Machine Challenge, BMW Summer Best Paper Finalist, ACM/IEEE International Conference on Human-Robot Finalist in the Technical Advances category for "Implicit Communication in a Joint A	ering 2019, 202   r School 201   Interaction 201   action" [26]. 201

Travel Grant, Cornell University Graduate School

# "R:SS Pioneer", Robotics: Science and Systems (R:SS)2018Participant in the highly selective (38%) R:SS Pioneers doctoral consortium.2017"HRI Pioneer", ACM/IEEE International Conference on Human-Robot Interaction2017

2x2017, 2018

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 Openbionics (2nd out of 900 projects) 20151st Place (SEK 110k) at the Robotdalen International Innovation Award for Openbionics 2015Ph.D. Fellowship, Sibley School of Mechanical & Aerospace Engineering, Cornell University 2013Award for Scientific Publications, Thomaidion Institution, NTUA 2013Greece Finalist, European Board of Engineering Students of Technology Competition 20122nd Prize, NTUA Innovative Design Competition 2011Summer Internship, Hydron Unipress, Łodz, Poland 2011

Funded by the International Association for the Exchange of Students for Technical Experience (IAESTE).

#### PUBLICATIONS

#### **Peer-Reviewed Journal Articles**

- P. Lancaster, C. Mavrogiannis, S. S. Srinivasa, and J. R. Smith. "Electrostatic Brakes Enable Individual Joint Control of Underactuated, Highly Articulated Robots". In: *The International Journal of Robotics Research* (2024).
- [2] 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.
- [3] 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).
- [4] 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].
- [5] 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.
- [6] 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].
- [7] 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**

- [8] C. Mavrogiannis, J. A. DeCastro, and S. Srinivasa. "Implicit Multiagent Coordination at Uncontrolled Intersections via Topological Braids". In: *Algorithmic Foundations of Robotics XV*. Ed. by S. M. LaValle, J. M. O'Kane, M. Otte, D. Sadigh, and P. Tokekar. Cham: Springer International Publishing, 2022, pp. 368–384.
- [9] C. Mavrogiannis and R. A. Knepper. "Decentralized Multi-Agent Navigation Planning with Braids". In: Algorithmic Foundations of Robotics XII. Ed. by K. Goldberg, P. Abbeel, K. Bekris, and L. Miller. Cham: Springer International Publishing, 2020, pp. 880–895.
- [10] 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**

- [11] A. Mavrogiannis, C. Mavrogiannis, and Y. Aloimonos. "Cook2LTL: Translating Cooking Recipes to LTL Formulae using Large Language Models". In: *IEEE International Conference on Robotics and Au*tomation (ICRA). 2024.
- [12] 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.
- [13] 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.
- [14] 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.
- [15] 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.
- [16] 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.
- [17] 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%].
- [18] 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%].
- [19] 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%].
- [20] 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%].
- [21] L. Ke, A. Kamat, J. Wang, T. Bhattacharjee, C. Mavrogiannis, and S. S. Srinivasa. "Telemanipulation 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.
- [22] 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%].
- [23] 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%].
- [24] 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.
- [25] 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%].
- [26] 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%].

- [27] 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.
- [28] 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.
- [29] 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.
- [30] 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.
- [31] 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.
- [32] 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.
- [33] 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**

- [34] C. Mavrogiannis. "Harmonious Mobility for Robots that Work with and around People". In: Proceedings of the AAAI Conference on Artificial Intelligence 38.20 (2024), pp. 22679–22679.
- [35] L. Stirling, J. Montgomerry, M. Draelos, C. Mavrogiannis, L. P. Robert, and O. C. Jenkins. "ROB 204: Introduction to Human-Robot Systems at the University of Michigan, Ann Arbor". In: Workshop on Designing an HRI Course for Undergraduate Education. ACM/IEEE International Conference on Human-Robot Interaction (HRI). 2024.
- [36] 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.
- [37] 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.
- [38] 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.
- [39] 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.
- [40] 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.
- [41] 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.
- [42] C. Mavrogiannis. "Online Multi-Agent Trajectory Generation for Adaptive Navigation Planning". In: Pioneers Workshop. Robotics: Science and Systems Conference (R:SS). 2018. [Acceptance 38%].

- [43] 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.
- [44] 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.
- [45] 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%].
- [46] C. Mavrogiannis and R. A. Knepper. "Decentralized Multi-Agent Navigation Planning with Braids". In: North East Robotics Colloquium (NERC). 2016.
- [47] 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.
- [48] 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.
- [49] 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

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

#### **Preprints** / Under Review

[52] S. Talia, M. Schmittle, A. Lambert, A. Spitzer, C. Mavrogiannis, and S. Srinivasa. "HOUND: An open-source, low-cost research platform for high-speed off-road underactuated nonholonomic driving". 2023. arXiv: 2311.11199 [cs.RO]. [In submission].

#### **Course Notes**

[53] 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**

- [54] 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.
- [55] 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.
- [56] 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).

- [57] 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.
- [58] 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

<b>Instructor, ROB 204: Introduction to Human-Robot Systems</b> Department of Robotics, University of Michigan	Winter 2024
<b>Instructor, ROB 498/599: Computational Human-Robot Interaction</b> Department of Robotics, University of Michigan Instructor rating: 4.9/5.0 Course rating: 4.4/5.0	Fall 2023
Instructor, CSE 478: Autonomous Robotics Paul G. Allen School of Computer Science & Engineering, University of Washington Course rating: $4.1/5.0$	Winter 2020
Teaching Assistant, CS 4750/5750: Foundations of Robotics Department of Computer Science, Cornell University	Fall 2016, Fall 2017

#### MENTORING

Current students			
Jeeho Ahn	PhD Robotics, UM		
Elvin Yang	PhD Robotics, UM		
Andrew Stratton	MS Robotics, UM		
Ariana Verges Alicea	MS Robotics, UM		
Yanxi Lin	MS Robotics, UM		
Sriram Priyadharshan	MS Robotics, UM		
Daniel Xu	MS Robotics, UM		
Mo Xu	MS EECS, UM		
Past students			
Allan Wang	PhD Robotics, CMU	coauthor $[3, 20]$	
Junha Roh	PhD CS, UW	coauthor [22]	now: Third Wave Automation
Amal Nanavati	PhD CS, UW	coauthor $[17, 18]$	
Nick Walker	PhD CS, UW	coauthor $[17, 19]$	
Patrick Lancaster	PhD CS, UW	coauthor $[1, 14, 56]$	now: Meta AI
Pratik Gyawali	MS ME, UW	coauthor [14]	now: Canvas Construction
Sriyash Poddar	BS Intern, IIT	coauthor $[2, 12]$	now: PhD in CSE, UW
Alex Lin	BS ACMS, UW		now: TerraClear
Liyiming Ke	PhD CS, UW	coauthor [21]	
Gilwoo Lee	PhD CS, UW	coauthor [40]	now: Zordi
Krishna Balasubramanian	MS ME, UW	coauthor $[2]$	now: Fox Robotics
Anush Gandra	MS ME, UW	coauthor $[2]$	now: May Mobility
Matthew Rockett	MS CS, UW	coauthor [56]	now: Zordi
Nikita Filippov	BS CS, UW		now: Amazon
Rishabh Madan	BS Intern, IIT	coauthor [22]	now: PhD in CS, Cornell
Arnav Thareja	BS CS, UW	coauthor [13]	
Akkshaj Singh	BS ECE, UW		now: Real-Time Innovations

Tudor Fanaru Sidharth Talia	BS CS, UW BS Intern, GGSIPU	coauthor [52, 13]	Now: PhD in CSE, UW
Adit Jha	BS ECE, UW	[0-, -0]	now: Microsoft
Alrick Dsouza	MS ME, UW		now: Nuro
Stefan Layanto	BS CS, UW		now: Lyft
Podshara Chanrungmaneekul	BS CS, UW		now: MS in CS, Rice
Alena Hutchinson	MEng CS, Cornell	coauthor [23]	now: Wanderlust Group
John Macdonald	BS CS, Cornell	coauthor [23]	now: Skydio

### SELECTED INVITED TALKS

"Harmonious Mobility for Robots that Work with and around People"	
New Faculty Highlights Program, AAAI Conference on Artificial Intelligence	Feb. 2024
"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 Interacti	ons 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	b. & Nov. 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"	
Talking Robotics	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	ı Dynamics"

Robotics Seminar, Cornell University	Nov. 2021
"Socially Competent Robot Navigation"	0
Robotics Colloquium, University of Washington	Oct. 2018
GAIPS Seminar, Instituto Superior Tecnico, Lisbon Portugal	Nov. 2018
AI Seminar Cornell University	Sept 2017
"Decentralized Multi-Agent Navigation Planning with Braids"	Sept. 2011
Robotics Seminar, Cornell University	Dec. 2017
FUNDING	
Current	
Office of Naval Research	2023-2024
SquadBot v2: High Performance Humanoid Robot for Urban Exploration	\$50,000
Co-author of the proposal. Subcontract under PI Siddhartha Srinivasa	
SERVICE	
Proposal Evaluation	
NSF Proposal Evaluation Panel	2021, 2024
Workshops/Tutorials at International Conferences	
Learning Motion Control for Mobile Robot Navigation: A Tutorial	2022
IEEE International Conference on Robotics and Automation (ICRA) I co-organized this tutorial together with Xuesu Xiao, Garrett Warnell, and Peter Stone.	Philadelpha, PA
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, Ji Hafner, Chrystopher Nehaniv, Daniel Polani, and Kerstin Dautenhahn.	min Rhim, Verena
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, Leila Takayama, and Siddhartha Srinivasa. Attendance: 120	Marynel Vázquez,
Geometry and Topology in Robotics: Learning, Optimization, Planning, and Co	ontrol 2021
Robotics: Science and Systems (R:SS)	Virtual
I co-organized this R:SS 2021 workshop together with Noémie Jaquier, Claire Liang, Leon Vasilopoulos, Hans-Peter Schröcker, Søren Hauberg, Subhrajit Bhattacharya, Florian Poko Srinivasa, and Suvrit Sra.	nel Rozo, Vasileios rny, Siddhartha S.
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 Tenenbaum. Attendance: 105	Isele, and Joshua

#### **Editorial Activities**

Guest Editor, ACM Transactions on Human-Robot Interaction (T-HRI)	2024
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 Conferen	ice on
Intelligent Robots and Systems (IROS)	2023
Program Committee, Undergraduate Consortium, AAAI Conference on Artificial Intelligence (AAAI)	2023
$\label{eq:program} \mbox{Program Committee}, \mbox{ACM}/\mbox{IEEE International Conference on Human-Robot Interaction (HRI)}$	2023
Website Chair, Conference on Robot Learning (CoRL)	2022
Co-chair, Session on Non-Holonomic Motion Planning and Theoretical Foundation, IEEE International	Con-
ference 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
$Pioneers\ Program\ Committee,\ ACM/IEEE\ International\ Conference\ on\ Human-Robot\ Interaction$	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 (T-HRI) · Transactions on Automation Science and Engineering (T-ASE) · Transactions on Intelligent Vehicles (T-IV) · 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) · IEEE Mediterranean Conference on Control and Automation (MED) · IEEE/RAS International Conference on Humanoid Robots · IEEE Ubiquitous Robots Conference · IEEE RAS/EMBS International Conference on Biomedical Robotics and Biomechatronics (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) · AAAI-HRI Fall Symposium Series: Artificial Intelligence for Human-Robot Interaction · IEEE Conference on Control Technology and Applications (CCTA) · International Symposium on Industrial Electronics (ISIE) · Urban, Planning, and Transport Research.

#### Member of Ph.D. Examination Committee

Gal Gorjup, University of Auckland, New Zealand

#### **Departmental Service**

#### Panel Discussion on Academic Job Search

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

2021

2022

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

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.

2016
2021
Virtual

#### Demo Lead, Personal Robotics Lab

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

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

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 deliberables.

**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**, **Openbionics**

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

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

## 2019-2021

Feb. 2020

#### 2013-2015

Sep. 2020 - April 2021

"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 [17]. [link]	
Toyota Research Institute Blog	June 1 2022
Blog post on our WAFR '22 paper [16]. [link]	
New Scientist	April 21 2022
"Electrostatic brakes make bendy robot arms a lot more efficient": Article on our braking work	[1]. [link]
technology.org	Oct. 1 2021
Blog post on our paper on topological analysis of multiagent traffic behavior [15]. [link]	
IEEE Spectrum Video Friday	Oct. 16 2020
Blog post featuring our Chopsticks robot [21]. [link]	
Wired	Oct. 5 2019
"These Small Cars Can Help Drive the Autonomous Future": article featuring MuSHR [56]. [lin	ık
Communications of the ACM	Aug. 27 2019
"Allen School Releases Robotic Race Car Platform to Drive Advances in AI Research, Educatio	n." [link]
AI <sup>3</sup>  Theory, Practice, Business	Aug. 16 2019
"A Low-Cost, Open-Source Robotic Racecar for Education and Research." [link]	0
Import AI	Aug. 26 2019
"Is it a bird? Is it a plane? No, it's a MuSHR robocar!" [link]	0
GeekWire	Aug. 21 2019
"Robotic race car platform from Univ. of Washington designed to speed research around A.I."	link]
Allen School News	Aug. 21 2019
"Allen School releases MuSHR robotic race car platform to drive advances in AI research and edu	cation." [link]
Cornell Chronicle	Jan. 19 2017
"Humans must overcome distrust of robots": article about our WAFR '16 paper [28]. [link]	
ERT (Greece National Public TV network)	Dec. 27 2016
Interview about OpenBionics at a morning news show. [link; in Greek]	
3ders.org	Nov. 5 2015
"OpenBionics adds NFC ready fingers to 3D printed hand prosthetics for 2015 Hackaday Prize	finals." [link]
blog.atmel.com	Nov. 3 2015
"1:1 interview with Hackaday Prize finalist OpenBionics." [link]	
Hackaday.com	Oct. 5 2015
"10 finalist projects prove we can save the world." [link]	
Hackaday.com	Sept. 2 2015
"Hackaday Prize Semifinalist: OpenBionics Affordable Prosthetic Hands." [link]	
3dprint.com	Sept. 23 2015
"OpenBionics Affordable Bionic Hand is Selected as a Hackaday Prize Semifinalist." [link]	
Hackaday.com	June 17 2015
"Hackaday Prize Entry: OpenBionics." [link]	
GoodNews.gr	May 8 2015
"The most Affordable Prosthetic Hands will be made in Greece" [in Greek]	
RoboHub.com	April 9 2015
"OpenBionics prosthetic hands: Open source, affordable, lightweight, anthropomorphic." [link]	
3ders.org	March 18 2015
"Greek OpenBionics unveils affordable, light-weight 3D printed bionic hands with 144 grasp move	ements." [link]
3DPrint.com	March 18 2015
"OpenBionics open source prosthetic hand can execute 144 different grasps & costs under 200."	[link]

#### LANGUAGES

English Greek French Full Professional Proficiency Full Professional Proficiency (Native) Minimum Professional Proficiency (DALF C2 2010)