Christoforos Christos Mavrogiannis

Assistant Professor of Robotics, University of Michigan, Ann Arbor
Director, Fluent Robotics Lab
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APPOINTMENTS

Assistant Professor Aug. 2023 - Present
University of Michigan (UM), Ann Arbor, MI, USA
Department of Robotics

Academic Guest Jan. 2026 - June 2026
ETH Zürich, Zürich, Switzerland
Department of Computer Science (D-INFK)
Host: Stelian Coros (Computational Robotics Lab)

Postdoctoral Research Associate July 2019 - July 2023
University of Washington (UW), Seattle, WA, USA
Paul G. Allen School of Computer Science & Engineering (CSE)
PI: Siddhartha S. Srinivasa (Personal Robotics Lab)

EDUCATION

Ph.D., Cornell University May 2019
Sibley School of Mechanical & Aerospace Engineering (MAE)
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

Michigan Housing Honored Instructor 2026
Student-nominated recognition for positive impact on residential students' academic experience.

ETH RobotX Robotics Research Fellowship 2025
Selective fellowship supporting a semester stay at ETH Zurich under Prof. Stelian Coros

Articles [8, 10] highlighted on the cover of The International Journal of Robotics Research 2024

Best-paper award [58], Workshop on Unsolved Problems in Social Robot Navigation 2024
Workshop held in conjunction with Robotics: Science and Systems (RSS) 2024.

New Faculty Highlights Program, AAAI Conference on Artificial Intelligence 2024
Consortium highlighting the research of selected, recently appointed faculty in AI.

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

Selected as one of 200 young researchers to interact with Laureates from CS and mathematics.

Postdoc Travel Award, CSE, UW 2019, 2022

Most Ethical Design, 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 [38].

Travel Grant, Cornell University Graduate School 2x2017, 2018

RSS Pioneer, Robotics: Science and Systems (RSS) 2018

Participant in the highly selective (38%) RSS Pioneers doctoral consortium at RSS 2018.

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

Participant in the highly selective (31%) Pioneers doctoral consortium at HRI 2017.

Travel Grant, International Workshop on the Algorithmic Foundations of Robotics 2016

2nd Place, Hackaday Prize for Openbionics (2nd out of 900 projects) 2015

1st Place, Robotdalen International Innovation Award for Openbionics 2015

1st-year Ph.D. Fellowship, Sibley School of MAE, Cornell University 2013

Award for Scientific Publications, Thomaidion Institution, NTUA 2013

Greece Finalist, EU Board of Engineering Students of Technology Competition 2012

2nd Prize, NTUA Innovative Design Competition 2011

IAESTE Summer Internship, Hydron Unipress, Łodz, Poland 2011

Funded by the Intl. Assn. for the Exchange of Students for Tech. Experience (IAESTE).

PUBLICATIONS

Under review

[1] P. Goyal, J. Liu, A. Stratton, T. Jain, and C. Mavrogiannis. "Alpaca: An Interactive Platform for Social Robot Navigation". In: *Anonymous subission*. 2026. [under review].

[2] P. Goyal, A. Stratton, and C. Mavrogiannis. "Rethinking Legibility in Social Robot Navigation: Impact of Intent Representation and Human Distraction". In: *ACM Transactions on Human-Robot Interaction* (2026). [under review].

[3] S. R. Marpally, A. Wang, A. Ghotavadekar, R. A. Ribeiro, N. Le, P. Bachiller-Burgos, P. Goyal, S. Agrawal, Y. Nitta, H. Z. Han, D. Song, M. Kuribayashi, K. Uehara, X. Wang, Y. Kong, D. M. Nguyen, A. Payandeh, G. Pérez-González, A. Torrejón-Harto, J. Ahn, T. Jain, A. Stratton, E. Yang, J. de Heuvel, N. Ostermann-Myrau, S. A. Sajja, M. Raj, D. Sato, G. Rouquette, N. Martelaro, M. Sugimoto, H. Takagi, C. Asakawa, M. Bennewitz, A. Steinfeld, X. Xiao, C. Mavrogiannis, and H. Soh. "ACME: A Multi-Cultural, Multi-Embodiment Social-Navigation Dataset". In: *The International Journal of Robotics Research* (2026). [under review].

[4] S. Singh and C. Mavrogiannis. "Rearranging Large Objects using a Team of Car-like Robot Pushers". In: *Anonymous Submission*. 2026. [under review].

[5] E. Yang and C. Mavrogiannis. "Learning from Humans for Proactive Assistance in Human-Robot Collaborative Transport". In: *Anonymous submission*. 2026. [under review].

Peer-Reviewed Journal Articles

[6] J. Ahn and C. Mavrogiannis. "ReloPush-BOSS: Optimization-guided Nonmonotone Rearrangement Planning for a Car-like Robot Pusher". In: *IEEE Robotics and Automation Letters* (2026).

[7] A. Stratton, K. Hauser, and C. Mavrogiannis. "Characterizing the Complexity of Social Robot Navigation Scenarios". In: *IEEE Robotics and Automation Letters* 10.1 (2025), pp. 184–191.

[8] 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* 43.14 (2024), pp. 2204–2220. [Cover highlight].

[9] C. Mavrogiannis. "Towards smooth mobile robot deployments in dynamic human environments". In: *AI Magazine* 45.3 (2024), pp. 419–428. [Invited paper, AAAI New Faculty Highlights].

[10] 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* 43.9 (2024), pp. 1299–1321. [Invited paper, cover highlight].

[11] 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.

[12] 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).

[13] 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.

[14] 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 paper].

[15] 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 paper].

Peer-Reviewed Conference Proceedings

[16] P. Goyal, A. Stratton, and C. Mavrogiannis. "Rethinking Legibility in Social Robot Navigation: Impact of Intent Representation and Human Distraction". In: *Late-Breaking Reports, Proceedings of the Companion of the ACM/IEEE International Conference on Human-Robot Interaction (HRI)*. 2026.

[17] A. Stratton, P. Singamaneni, P. Goyal, R. Alami, and C. Mavrogiannis. "Bi^3: A Biplatform, Bicultural, Biperson Dataset for Social Robot Navigation". In: *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA)*. 2026. [Acceptance 38%].

[18] A. Stratton, P. Singamaneni, P. Goyal, R. Alami, and C. Mavrogiannis. "How Human Motion Prediction Quality Shapes Social Robot Navigation Performance in Constrained Spaces". In: *Proceedings of the ACM/IEEE International Conference on Human-Robot Interaction (HRI)*. 2026. [Acceptance 23.2%].

[19] J. Ahn and C. Mavrogiannis. "From A to Ω: Pixel Art with a Mobile Robot". In: *Special Session: Arts in Robotics*. IEEE International Conference on Robotics and Automation (ICRA). 2025.

[20] J. Ahn and C. Mavrogiannis. "ReloPush: Multi-object Rearrangement in Confined Spaces with a Nonholonomic Mobile Robot Pusher". In: *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA)*. 2025. [Acceptance 38%].

[21] E. Yang and C. Mavrogiannis. "Implicit Communication in Human-Robot Collaborative Transport". In: *Proceedings of the ACM/IEEE International Conference on Human-Robot Interaction (HRI)*. 2025. [Acceptance 25%].

[22] A. Mavrogiannis, C. Mavrogiannis, and Y. Aloimonos. "Cook2LTL: Translating Cooking Recipes to LTL Formulae using Large Language Models". In: *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA)*. 2024.

[23] 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". In: *Proceedings of Robotics: Science and Systems (RSS)*. 2024. [Acceptance 29%].

[24] 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.

[25] 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.

[26] 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.

[27] 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.

[28] 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.

[29] 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%].

[30] 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%].

[31] 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%].

[32] 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%].

[33] 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.

[34] 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%].

[35] 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%].

[36] 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.

[37] 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%].

[38] 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%].

[39] 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.

[40] 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.

[41] G. Kontoudis, M. Liarokapis, A. 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.

[42] C. Mavrogiannis, M. 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.

[43] C. Mavrogiannis, C. Bechlioulis, M. 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.

[44] A. Zisimatos, M. 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.

[45] C. Mavrogiannis, C. 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

[46] J. Ahn and C. Mavrogiannis. "MultiPush: Multirobot Nonprehensile Rearrangement Planning". In: *Workshop on Multi-Agent Robotic Systems: Real-World Collaboration and Interaction*. IEEE International Conference on Robotics and Automation (ICRA). 2026.

[47] P. Goyal, J. Liu, A. Stratton, T. Jain, and C. Mavrogiannis. "Alpaca: An Interactive Platform for Social Robot Navigation". In: *Failing Forward: Design and Deployment Lessons from Real-World Human-Robot Interaction*. ACM/IEEE International Conference on Human-Robot Interaction (HRI). 2026.

[48] P. Goyal, J. Liu, A. Stratton, T. Jain, and C. Mavrogiannis. "Alpaca: An Interactive Platform for Social Robot Navigation". In: *Expressive robot faces with Vizij: a workshop / tutorial hybrid*. ACM/IEEE International Conference on Human-Robot Interaction (HRI). 2026.

[49] A. Stratton, P. Singamaneni, P. Goyal, R. Alami, and C. Mavrogiannis. "How Human Motion Prediction Quality Shapes Social Robot Navigation Performance in Constrained Spaces". In: *Workshop on Shared Challenges in Human-Centered and Resilient Robotic Autonomy*. IEEE International Conference on Robotics and Automation (ICRA). 2026.

[50] J. Ahn and C. Mavrogiannis. "Multi-object Rearrangement in Confined Spaces using a Car-like Robot Pusher". In: *Block by Block: Collaborative Strategies for Multi-agent Robotic Construction*. IEEE International Conference on Robotics and Automation (ICRA). 2025.

[51] P. Goyal, A. Stratton, and C. Mavrogiannis. "Dynamic Legibility of Robot Passing Side Improves Hallway Navigation". In: *Workshop on Advances in Social Robot Navigation: Planning, HRI, and Beyond*. IEEE International Conference on Robotics and Automation (ICRA). 2025.

[52] S. Singh and C. Mavrogiannis. "Towards Collaborative Manipulation with Car-like Robot Pushers". In: *Block by Block: Collaborative Strategies for Multi-agent Robotic Construction*. IEEE International Conference on Robotics and Automation (ICRA). 2025.

[53] A. Stratton, P. T. Singamaneni, R. Alami, and C. Mavrogiannis. "Effects of Human Motion Prediction Quality on Robot Navigation and Human Impressions in Teamwork Scenarios". In: *Workshop on Long-Term Human Motion Prediction*. IEEE International Conference on Robotics and Automation (ICRA). 2025.

[54] E. Yang and C. Mavrogiannis. "Implicit Communication in Human-Robot Collaborative Transport". In: *Workshop on Long-Term Human Motion Prediction*. IEEE International Conference on Robotics and Automation (ICRA). 2025.

[55] E. Yang and C. Mavrogiannis. "Implicit Communication in Human-Robot Collaborative Transport". In: *X-HRI Workshop on Explainability for Human-Robot Collaboration: Real World Concerns*. ACM/IEEE International Conference on Human-Robot Interaction (HRI). 2025.

[56] 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.

[57] 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.

[58] A. Stratton, K. Hauser, and C. Mavrogiannis. "Towards a Characterization of the Complexity of Social Robot Navigation Scenarios". In: *Workshop on Unsolved Problems in Social Robot Navigation*. Robotics: Science and Systems (RSS). 2024. [Best-paper award (1/12 papers)].

[59] 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.

[60] 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.

[61] 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.

[62] 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.

[63] 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.

[64] 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.

[65] C. Mavrogiannis. "Online Multi-Agent Trajectory Generation for Adaptive Navigation Planning". In: *Pioneers Workshop*. Robotics: Science and Systems Conference (R:SS). 2018. [Acceptance 38%].

[66] 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.

[67] 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.

[68] 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%].

[69] C. Mavrogiannis and R. A. Knepper. "Decentralized Multi-Agent Navigation Planning with Braids". In: *North East Robotics Colloquium (NERC)*. 2016.

[70] 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.

[71] 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.

[72] M. Liarokapis, A. 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

[73] C. Mavrogiannis. "Motion Planning for Socially Competent Robot Navigation". PhD thesis. Cornell University, 2019.

[74] C. Mavrogiannis. "Grasp Synthesis Algorithms for Multifingered Robot Hands". MA thesis. National Technical University of Athens, 2013.

Course Notes

[75] 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

[76] 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.

[77] 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.

[78] 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).

[79] G. Kontoudis, M. 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.

[80] A. Zisimatos, M. Liarokapis, C. Mavrogiannis, G. 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

Instructor, ROB 498/599: Computational Human-Robot Interaction
Department of Robotics, University of Michigan
· Fall 2025 Instructor rating: 4.6/5.0 Course rating: 4.5/5.0 Attendance: 28
· Fall 2024 Instructor rating: 4.6/5.0 Course rating: 4.5/5.0 Attendance: 25
· Fall 2023 Instructor rating: 4.9/5.0 Course rating: 4.4/5.0 Attendance: 9

Instructor, ROB 204: Introduction to Human-Robot Systems
Department of Robotics, University of Michigan
· Fall 2026 Instructor rating: TBD Course rating: TBD Attendance: TBD
· Winter 2024 Instructor rating: 4.7/5.0 Course rating: 4.0/5.0 Attendance: 73

Instructor, CSE 478: Autonomous Robotics
Paul G. Allen School of Computer Science & Engineering, University of Washington
· Winter 2020 Instructor rating: 3.8/5.0 Course rating: 4.1/5.0 Attendance: 36

Teaching Assistant, CS 4750/5750: Foundations of Robotics
Department of Computer Science, Cornell University
· Fall 2017
· Fall 2016

MENTORING

Ph.D. Students

Pranav Goyal	2025-
Andrew Stratton	2024-
Shambhavi Singh	2024-
Jeeho Ahn	2023-
Elvin Yang	2023-

M.S. Students

Nikola Staykov (co-advised with Stelian Coros at ETH) 2026
Jiamu Liu 2025-

B.S. Students

Manuel Leutwyler (co-advised with Stelian Coros at ETH) 2026

Alumni

Master's students

Anandi Arora (MS Robotics 2027)
Jeffrey Chen (MS Robotics 2026) → Engineer, Torc Robotics
Ariana Verges Alicea (MS Robotics 2025)
Daniel Xu (MS Robotics 2024)
Yanxi Lin (MS Robotics 2024) → PhD in CS, University of Utah
Mo Xu (MS EECS 2024) → PhD in CS, University of Wisconsin
Sriram Priyadharshan (MS Robotics 2024) → SLAM Engineer, Bonsai Robotics
Sukruthi Chidananda (MS Robotics 2024) → NIOSH

Undergraduate students

Tisha Jain (Undergraduate Robotics 2026) → PhD in CS, Cornell
Julian Skifstad (Undergraduate Robotics 2025) → PhD in ECE, Georgia Tech
Sikai Li (Undergraduate EECS 2025) → PhD in CS, UNC Chapel Hill

Students mentored during postdoc and PhD studies

Allan Wang (Miraikan) · Junha Roh (Third Wave Automation) · Amal Nanavati (UW) · Nick Walker (UW) · Patrick Lancaster (Meta AI) · Pratik Gyawali (Fox Robotics) · Sriyash Poddar (UW PhD) · Liyiming Ke (UW) · Gilwoo Lee (Zordi) · Krishna Balasubramanian (Fox Robotics) · Anush Gandra (May Mobility) · Matthew Rockett (Zordi) · Rishabh Madan (Cornell PhD) · Ranav Thareja (UW MS) · Akkshaj Singh (RTI) · Tudor Fanaru (Microsoft) · Sidharth Talia (UW PhD) · Adit Jha (Microsoft) · Alrick Dsouza (Nuro) · Stefan Layanto (Lyft) · Podshara Chanrungmaneekul (Rice PhD) · Alena Hutchinson (Claviyo) · John Macdonald (Skydio)

Ph.D. Thesis Committees

Austin Nguyen, Ph.D. in Electrical & Computer Engineering, University of Michigan
Shubham Kumbhar, Ph.D. in Mechanical Engineering, University of Delaware
Xin Ye, Ph.D. in Information, University of Michigan
Francesco D'Orazio, Ph.D. in Automation, Sapienza University of Rome 2026
Brandon Apodaca, Ph.D. in Robotics, University of Michigan 2026
Rüya Karagülle, Ph.D. in Electrical & Computer Engineering, University of Michigan 2026
Hannah Larson, Ph.D. in Mechanical Engineering, University of Michigan 2025
Gal Gorjup, Ph.D. in Mechatronics, University of Auckland 2021

SELECTED INVITED TALKS, SEMINARS & PANELS

Dagstuhl Seminar 27131: Computational Intelligence in Social and Human Aspects of Robot Navigation

· Participant in week-long seminar at Schloss Dagstuhl, Germany. April 2027

Towards site preparation with multirobot teams

· IROS Workshop on Tightly Coupled Physical Collaboration in Multi-Robot Systems Sept 2026

Dagstuhl Seminar 26271: Towards Physically Assistive Robots in the Home

· Participant in week-long seminar at Schloss Dagstuhl, Germany. June 2026

Towards fluent human-robot teamwork

· IROS Workshop on Social Navigation: From Humans, to Robots, and to the World — Sept 2026
· Control Seminar, University of Michigan — Sept 2026
· ETH Robotics Summer School, Geneva, Switzerland — June 2026
· Apple Special Projects Group — June 2026
· Amazon Industrial Robotics Group — June 2026
· Automatic Control Laboratory, ETH Zurich — June 2026
· Technical University of Munich — May 2026
· Department of Computer Science Faculty Lunch, ETH Zurich — May 2026
· Robotic Systems Laboratory, ETH Zurich — May 2026
· ETH AI Center, ETH Zurich — April 2026
· Mobile Robotics Laboratory, ETH Zurich — March 2026
· Computational Robotics Lab Seminar, ETH Zurich — Jan 2026
· Algorithmic Systems Theory Lab, ETH Zurich — Jan 2026

Towards fluent human-robot teamwork via implicit communication

·ICRA workshop on Long-term Human Motion Prediction — May 2025
Panathenea Panel on Deep Tech — May 2025

Advisor Relationships and Mentoring

·Guest lecture in the Roboseminar series for 1st-year PhD students — Jan. 2024, Jan/Oct 2025

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 HRI — May 2023

Spatial Interaction in Human-Robot Systems

·Guest lecture for ROB 204: Introduction to Human-Robot Systems — Feb. & Nov. 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

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 Navigation in Human Environments

·Robotics Seminar, Cornell University — Sept. 2021

·Kod*Lab, University of Pennsylvania Aug. 2021

UW Capstone Demo for the Honda CMM 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 w/ Topological Invariants

·Robotics Seminar, Cornell University Nov. 2021

Dagstuhl Seminar 19411: Social Agents for Teamwork and Group Interactions

·Participant in week-long seminar at Schloss Dagstuhl, Germany. Oct. 2019

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

SERVICE

Proposal Evaluation

NSF Proposal Evaluation Panel 2021, 2x2024

Workshops/Tutorials at International Conferences

Learning Motion Control for Mobile Robot Navigation: A Tutorial ICRA 2022
w/ Xuesu Xiao, Garrett Warnell, and Peter Stone

Robot Curiosity in HRI HRI 2022
w/ Ali Ayub, Marcus Scheunemann, Jimin Rhim, Verena Hafner, Chrystopher Nehaniv, Daniel Polani, and Kerstin Dautenhahn

Social Robot Navigation RSS 2021
w/ Pete Trautman, Francesca Baldini, Marynel Vázquez, Leila Takayama, and Siddhartha Srinivasa

Geometry and Topology in Robotics: Learning, Optimization, Planning, and Control RSS 2021
w/ 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 ICRA 2021
w/ Heni Ben Amor, Soshi Iba, David Isele, and Joshua Tenenbaum

Editorial Duties

Chair, Session "Perception I" HRI 2026
Program Committee, Int. Workshop on the Algorithmic Foundations of Robotics (WAFR) 2026
Awards Committee, ACM/IEEE International Conference on Human-Robot Interaction (HRI) 2026
Associate Editor, IEEE International Conference on Robotics and Automation (ICRA) 2024-2026
Program Committee, ACM/IEEE Intl. Conference on Human-Robot Interaction (HRI) 2023-2026

Chair, Sessions "Social Navigation I", "Planning around People for Social Navigation"	ICRA 2025
Chair, Session "Robot Motion"	HRI 2025
Guest Editor, ACM Transactions on Human-Robot Interaction (T-HRI)	2024
Videos/Demos Chair, ACM/IEEE International Conference on Human-Robot Interaction (HRI)	2024
Co-chair, Session "Planning for Distributed and Multi-Robot Systems I"	IROS 2023
Program Committee, Ugrad Consortium, AAAI Conference on Artificial Intelligence (AAAI)	2023
Website Chair, Conference on Robot Learning (CoRL)	2022
Co-chair, Session "Non-Holonomic Motion Planning and Theoretical Foundation"	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 Assn on Computational Linguistics (NAACL)	2019
Pioneers Program Committee, ACM/IEEE International Conference on Human-Robot Interaction	2019

Reviewer

International Journal of Robotics Research (IJRR) · Science Robotics · Journal of Artificial Intelligence (AIJ) · Robotics: Science and Systems (RSS) · IEEE Transactions on Robotics (T-RO) · IEEE Robotics and Automation Magazine (RAM) · Journal of Field Robotics (JFR) · Transactions on Human-Robot Interaction (T-HRI) · Communications of the ACM · Transactions on Automation Science and Engineering (T-ASE) · Journal of Artificial Intelligence Research (JAIR) · 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) · International Symposium of Robotics Research (ISRR) · 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.

Departmental Service

Seminar Committee Co-chair, Department of Robotics, University of Michigan	2025-
Strategic Planning Committee, Department of Robotics, University of Michigan	2024-2025
Graduate Admissions Committee, Department of Robotics, University of Michigan	2023-
Panel Discussion on Academic Job Search, School of CSE, UW	2022
Reader, Ph.D. Admissions Committee, School of CSE, UW	2020
Covid Safety Lead for Robotics Labs, School of CSE, UW	2020-2021
Organizer, Northeast Robotics Colloquium, Cornell University	2016

Outreach

Mentor, *NextProf Nexus Future Faculty Workshop*, University of Michigan 2024
Panelist and Faculty mentor, "Pathways through Robotics", Inclusion@RSS 2024
Workshop aiming to increase the participation of underrepresented groups in robotics.
Mentor, *Mad Hacks: Fury Code* Vehicle Cybersecurity Hackathon 2021
Demo Lead, Personal Robotics Lab 2020
Led a team of 16 students and staff to present interactive demos to the general public at AAAS.

PROJECTS MANAGED

UW Team Lead, *Curious Minded Machine (CMM)* *2019-2021*
CMM (website: https://cmm.usa.honda-ri.com) was a 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.

Cofounder, Openbionics 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

Agence France-Presse June 11 2026
Quoted in the article "AI robot cleaners leave the lab for China's living rooms". [link]
IEEE Spectrum March 21 2026
Our Bi^3 paper was featured on IEEE Spectrum Video Friday [17]. [link]
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 [29]. [link]
Toyota Research Institute Blog June 1 2022

Blog post on our WAFR '22 paper [28]. [link]

New Scientist April 21 2022

"Electrostatic brakes make bendy robot arms a lot more efficient": Article on our braking work [8]. [link]

technology.org Oct. 1 2021

Blog post on our paper on topological analysis of multiagent traffic behavior [27]. [link]

IEEE Spectrum Video Friday Oct. 16 2020

Blog post featuring our Chopsticks robot [33]. [link]

Wired Oct. 5 2019

"These Small Cars Can Help Drive the Autonomous Future": article featuring MuSHR [78]. [link]

Communications of the ACM Aug. 27 2019

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

AI^3|Theory, Practice, Business Aug. 16 2019

"A Low-Cost, Open-Source Robotic Racecar for Education and Research." [link]

Import AI Aug. 26 2019

"Is it a bird? Is it a plane? No, it's a MuSHR robocar!" [link]

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 education." [link]

Cornell Chronicle Jan. 19 2017

"Humans must overcome distrust of robots": article about our WAFR '16 paper [40]. [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 movements." [link]

3DPrint.com March 18 2015

"OpenBionics open source prosthetic hand can execute 144 different grasps & costs under 200." [link]

LANGUAGES

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