

Marco Pavone

Associate Professor of Aeronautics and Astronautics

Stanford University
Department of Aeronautics and Astronautics
496 Lomita Mall, Room 261
Stanford, CA 94305-4035

Biosketch

Dr. Marco Pavone is an Associate Professor of Aeronautics and Astronautics at Stanford University, where he is the Director of the Autonomous Systems Laboratory and Co-Director of the Center for Automotive Research at Stanford. He is currently on a partial leave of absence at NVIDIA serving as Director of Autonomous Vehicle Research. Before joining Stanford, he was a Research Technologist within the Robotics Section at the NASA Jet Propulsion Laboratory. He received a Ph.D. degree in Aeronautics and Astronautics from the Massachusetts Institute of Technology in 2010. Dr. Pavone's expertise lies in the fields of optimal control, decision making under uncertainty, and robot autonomy. His main research interests are in the development of methodologies for the analysis, design, and control of autonomous systems, with an emphasis on self-driving cars, autonomous aerospace vehicles, and future mobility systems. He is the recipient of a number of awards, including a **Presidential Early Career Award for Scientists and Engineers** from President Barack Obama (the highest honor bestowed by the U.S. government on outstanding scientists and engineers beginning their independent careers), an **ONR Young Investigator Award**, an **NSF CAREER Award**, a **NASA Early Career Faculty Award**, and an Early-Career Spotlight Award from the Robotics Science and Systems Foundation. He was identified by the American Society for Engineering Education (ASEE) as one of America's 20 most highly promising investigators under the age of 40, and was invited to the **White House** in 2014 and the **U.S. Senate** in 2016 and 2017 to present his research on autonomous ground and aerospace vehicles. His work has been recognized with best paper nominations or awards at the European Control Conference, at the IEEE International Conference on Intelligent Transportation Systems, at the Field and Service Robotics Conference, at the Robotics: Science and Systems Conference, at the ROBOCOMM Conference, and at NASA symposia. He is currently serving as an Associate Editor for the IEEE Control Systems Magazine.

Education

Massachusetts Institute of Technology (Cambridge, MA), Ph.D. in Aeronautics and Astronautics, 2010. Advisor: Prof. E. Frazzoli.

Scuola Superiore of Catania (Catania, Italy), Diploma in Computer Engineering, 2005.

University of Catania (Catania, Italy), Laurea (B.S.+M.S. equivalent) in Electrical Engineering, 2004.

Employment

Director, Autonomous Vehicle Research, NVIDIA, CA (Feb. 2021–present). (On a partial leave of absence from Stanford.)

Associate Professor with tenure, Aeronautics and Astronautics Department, Stanford University, Stanford, CA (Feb. 2019–present). Director, Autonomous Systems Laboratory: <http://asl.stanford.edu/>. Co-Director, Center for Automotive Research at Stanford: <https://cars.stanford.edu/>.

Associate Professor (by courtesy), Department of Electrical Engineering, Institute for Computational and Mathematical Engineering, and Information Systems Laboratory, Stanford University, Stanford, CA (Feb. 2019–present).

Assistant Professor, Aeronautics and Astronautics Department, Stanford University, Stanford, CA (Feb. 2012–Jan 2019). Director, Autonomous Systems Laboratory: <http://asl.stanford.edu/>. Co-Director, Center for Automotive Research at Stanford: <https://cars.stanford.edu/>.

Assistant Professor (by courtesy), Department of Electrical Engineering, Institute for Computational and Mathematical Engineering, and Information Systems Laboratory, Stanford University, Stanford, CA (Oct. 2012–Jan 2019).

Research Technologist, NASA Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA (Oct. 2010–Jan. 2012).

Postdoctoral Associate, Laboratory for Information and Decision Systems, Massachusetts Institute of Technology, Cambridge, MA (June 2010–Sept. 2010).

Graduate Research Assistant, Aeronautics and Astronautics Department, Massachusetts Institute of Technology, Cambridge, MA (Sept. 2006–June 2010).

Analyst, Accenture, Milan, Italy (Nov. 2005–Jan. 2006).

Selected Awards

- **Major Awards:**

- **PECASE Award** (2017)–the highest honor bestowed by the U.S. government on outstanding scientists and engineers beginning their independent careers.
- **ONR Young Investigator Award** (2017).
- **NSF CAREER Award** (2015).
- **NASA Early Career Faculty Award** (2012).

- **Other Awards (selected):**

- Best Student Paper Award Finalist (as advisor), European Control Conference (2020).
- Best Multi-Robot Paper Finalist, IEEE International Conference on Robotics and Automation (2020).
- Early-Career Spotlight Award from the Robotics Science and Systems Foundation (2019).
- Vance D. and Arlene C. Coffman Faculty Scholar (2019).
- Named Top 20 Under 40 by American Society for Engineering Education (2018).
- Best Student Paper Award (as advisor), IEEE International Conference on Intelligent Transportation Systems (2018).
- ISSNAF Franco Strazzabosco Award For Engineers (2017).
- Invited to the U.S. Senate to brief U.S. Senate staff about space robotics (2017 and 2016).
- Best Student Paper Award (as advisor), Field and Service Robotics Conference (2015).
- Best Paper Award Finalist, Robotics: Science and Systems Conference (2014).
- Invited to the White House to brief White House staff about self-driving cars (2014).
- Certificate of Appreciation from NASA Space Technology Mission Directorate for “outstanding contributions to NASA” (2014).
- National Academy of Engineering’s Frontiers of Engineering Program (2013).
- Hellman Faculty Scholar Award (2012).

Teaching and Training

Undergraduate Curriculum

- Served as faculty director for Stanford Student Space Initiative, a student group involving more than 200 undergraduate students in aerospace-related projects (e.g., rockets and high-altitude balloons).
- Aero/Astro undergraduate program director (2014 - 2017).
- Added a hands-on project to the Stanford Introduction to Aeronautics and Astronautics course, where students design, build, and test a glider.
- Offered several undergraduate student opportunities to participate in research projects and supervised their creative efforts.
- Served as pre-major advisor for Stanford University low-income and first-generation students at Stanford University.
- Engaged San Francisco Bay Area high-school students in basic aerospace research performed in his lab.

Graduate Curriculum

- Designed new graduate courses on robust control, optimal control, and robotic autonomy.

Courses Taught

- AA 100: Introduction to Aeronautics and Astronautics, Fall '12, '13, '14, '15, '16, '17, and '18 – Undergraduate Level.
- AA 212: Advanced Feedback Control Design, Winter '13, '14, '15, and '16 – Graduate Level.
- AA 203: Introduction to Optimal Control and Dynamic Optimization, Spring '13, '14, '15, '16, '17, '18, '19, and '20 – Graduate Level.
- AA 274: Principles of Robotic Autonomy, Winter '17, '18, and '19 – Graduate Level.
- AA 274A: Principles of Robot Autonomy I, Fall '19 and '20 – Graduate Level.
- AA 274B: Principles of Robot Autonomy II, Winter '20, '21, and '22 – Graduate Level.

Students

Current Ph.D. Students

- Student Name: Rohan Sinha.
Thesis: TBD.
Anticipated Date of Graduation: 2025.
- Student Name: Devansh Jalota.
Thesis: TBD.
Anticipated Date of Graduation: 2024.
- Student Name: Robert Dyro.
Thesis: TBD.
Anticipated Date of Graduation: 2024.

- Student Name: Robin Brown.
Thesis: TBD.
Anticipated Date of Graduation: 2024.
- Student Name: Somrita Banerjee.
Thesis: TBD.
Anticipated Date of Graduation: 2024.
- Student Name: Stephanie Schneider.
Thesis: TBD.
Anticipated Date of Graduation: 2024.
- Student Name: Thomas Lew.
Thesis: TBD.
Anticipated Date of Graduation: 2023.
- Student Name: Spencer M. Richards.
Thesis: TBD.
Anticipated Date of Graduation: 2023.
- Student Name: Amine Elhafsi.
Thesis: "Safe Motion Planning in Unknown Environments."
Anticipated Date of Graduation: 2023.
- Student Name: Apoorva Sharma.
Thesis: "Uncertainty-aware Learning and Control."
Anticipated Date of Graduation: 2022.
- Student Name: Matthew Tsao.
Thesis: "On the Interaction between Autonomous Mobility-on-Demand and the Public Transportation System: Models and Algorithms."
Anticipated Date of Graduation: 2022.

Former Ph.D. Students

- Student Name: Abhishek Cauligi.
Thesis: "Data-Driven Approaches for Mixed Integer Convex Programming in Robot Control."
Graduated: 2021. Now at NASA Jet Propulsion Laboratory.
- Student Name: Boris Ivanovic.
Thesis: "Trajectory Forecasting in the Modern Robotic Autonomy Stack."
Graduated: 2021. Now at NVIDIA.
- Student Name: Joseph Lorenzetti.
Thesis: "Reduced Order Model Predictive Control of High-Dimensional Systems."
Graduated: 2021. Now at Zoox.
- Student Name: James Harrison.
Thesis: "Uncertainty and Efficiency in Adaptive Robot Learning and Control."
Graduated: 2021. Now at Google.
- Student Name: Karen Leung.
Thesis: "On Using Formal Methods for Safe and Robust Robot Autonomy."
Graduated: 2021. Now at NVIDIA.
- Student Name: Andrew Bylard.
Thesis: "Leveraging the Geometric Structure of Robotic Tasks for Motion Design."
Graduated: 2021. Now at Dexterity.

- Student Name: Benoit Landry.
Thesis: "Differentiable and Bilevel Optimization for Control in Robotics."
Graduated: 2021. Now at Apple.
- Student Name: Ramon Iglesias.
Thesis: "Stochastic Modeling and Control of Autonomous Mobility-on-Demand Systems."
Graduated: 2019. Now at Lyft.
- Student Name: Sumeet Singh.
Thesis: "Robust Control, Planning, and Inference for Safe Robot Autonomy."
Graduated: 2019. Now at Google Brain.
- Student Name: Edward Schmerling.
Thesis: "Multimodal Modeling and Uncertainty Quantification for Robot Planning and Decision Making."
Graduated: 2019. Now at Stanford.
- Student Name: Brian Ichter.
Thesis: "Massive Parallelism and Sampling Strategies for Robust and Real-time Robotic Motion Planning."
Graduated: 2018. Now at Google Brain.
- Student Name: Benjamin Hockman.
Thesis: "Robotic Mobility on Small Solar System Bodies: Design, Control, and Autonomy."
Graduated: 2018. Now at NASA Jet Propulsion Laboratory.
- Student Name: Stefan Jorgensen.
Thesis: "Submodular Optimization for Risk-Aware Coordination of Multi-Robot Systems."
Graduated: 2018. Now at Shield AI.
- Student Name: Federico Rossi.
Thesis: "On the Interaction between Autonomous Mobility-on-Demand Systems and the Built Environment: Models and Large Scale Coordination Algorithms."
Graduated: 2018. Now at NASA Jet Propulsion Laboratory.
- Student Name: Yin-Lam Chow.
Thesis: "Risk-Sensitive and Data-Driven Sequential Decision Making."
Graduated: 2016. Now at Google DeepMind.
- Student Name: Rick Zhang.
Thesis: "Models and Large-Scale Coordination Algorithms for Autonomous Mobility-on-Demand."
Graduated: 2016. Now at Zoox.
- Student Name: Ross Allen.
Thesis: "A Real-Time Framework for Kinodynamic Planning with Application to Quadrotor Obstacle Avoidance."
Graduated: 2016. Now at MIT Lincoln Laboratory.
- Student Name: Joseph Starek.
Thesis: "Sampling-Based Motion Planning for Safe and Efficient Spacecraft Proximity Operations."
Graduated: 2016. Now at Nuro.

Current Postdoctoral Researchers

- Name: Karthik Gopalakrishnan
Appointed: 2021.

- Name: Shreyas Kousik
Appointed: 2021.
- Name: Kaidi Yang.
Appointed: 2019.

Former Postdoctoral Researchers Supervised

- Name: Navid Azizan.
Appointed: 2020. Now Assistant Professor at Massachusetts Institute of Technology.
- Name: Sandeep Chinchali.
Appointed: 2020. Now Assistant Professor at The University of Texas at Austin.
- Name: Mauro Salazar.
Appointed: 2019. Now Assistant Professor at the Eindhoven University of Technology.
- Name: Kiril Solovey.
Appointed: 2018. Now Assistant Professor at Technion.
- Name: Riccardo Bonalli.
Appointed: 2018. Now Researcher at the Centre National de la Recherche Scientifique (CNRS).
- Name: Mo Chen.
Appointed: 2017. Now Assistant Professor at Simon Fraser University.
- Name: Anirudha Majumdar.
Appointed: 2016. Now Assistant Professor at Princeton University.

University Service Activities

- Aeronautics and Astronautics Qualls Committee (2020–2021).
- Undergraduate Program Director (2020).
- Director of the Aeronautics and Astronautics Industrial Affiliates Program (2019 – present).
- Aeronautics and Astronautics Search Committee (2018–2019).
- Institute for Computational and Mathematical Engineering Admissions Committee (2018–2019).
- Ad Hoc Hiring Committee on Data Science and Physics-Based Computation (2018).
- Institute for Computational and Mathematical Engineering Admissions Committee (2017–2018).
- Aeronautics and Astronautics Curriculum Coordinator for “Dynamics, Guidance, Navigation, Control, and Autonomy” Area (2017–2021).
- Aeronautics and Astronautics Search Committee (2016–2017).
- Electrical Engineering Search Committee (2016–2017).
- Member of the Undergraduate Council of the School of Engineering (2015–2017).
- Aeronautics and Astronautics Undergraduate Initiative (2015–2017).
- Institute for Computational and Mathematical Engineering Search Committee (2015–2016).
- Mechanical Engineering Search Committee (2015–2016).
- Aeronautics and Astronautics Search Committee (2014–2015).
- Undergraduate Program Director (2014–2017).

Marco Pavone

- Faculty Director for Stanford Student Space Initiative (2013–present).
- Space Committee (2013–2015).
- Thesis Selection Committee for Ballhaus Award (2012–2014).
- Aeronautics and Astronautics Admissions Committee (2012–2013).

Professional Service Activities

Editorial Boards

- Associate Editor for the IEEE Control Systems Magazine (2015–present).

Conference Committees

- Area Chair, Conference on Robot Learning (2018 and 2021).
- Co-Organizer, Bay Area Robotics Symposium (2018, 2017, 2016, and 2015).
- Area Chair, Robotics: Science and Systems Conference (2018 and 2017).
- Program Co-Chair, IEEE International Conference on Simulation, Modeling and Programming for Autonomous Robots (2016).
- Session Co-Chair, National Academy of Engineering’s US Frontiers of Engineering Symposium (2016).
- Associate Editor for the IEEE/RSJ International Conference on Intelligent Robots and Systems (2015).
- Co-Organizer, Stanford-Berkeley Robotics Symposium (2014).
- Guest Editor, special issue on “Constrained decision-making in robotics: models, algorithms, and applications,” Autonomous Robots (2014).
- Local Arrangements Chair, NASA Innovative Advanced Concepts Symposium (2014).
- Organizer of workshops at a number of conferences, including ACC (2010, 2015) and RSS (2011, 2014).

Memberships

- Member, the American Institute of Aeronautics and Astronautics (AIAA).
- Member, Institute of Electrical and Electronics Engineers (IEEE).

Reviewer

- *Journal reviewer*: AIAA Journal of Guidance, Control, and Dynamics (“Excellent Reviewer,” 2016, 2012, 2011) ◇ IEEE Transactions on Automatic Control ◇ IEEE Control Systems Magazine ◇ Automatica ◇ International Journal of Robust and Nonlinear Control ◇ ASME Journal of Dynamic Systems, Measurement, and Control ◇ International Journal of Control ◇ International Journal of Robotics Research ◇ IEEE Transactions on Robotics ◇ Autonomous Robots ◇ Journal of Robotics ◇ Journal of Intelligent & Robotic Systems ◇ Journal of Optimization Theory and Applications ◇ Computers & Operations Research ◇ Annals of Operations Research ◇ INFORMS Journal on Computing ◇ Naval Research Logistics ◇ ACM Transactions on Sensor Networks ◇ IEEE Transactions on Mobile Computing ◇ Transportation Science ◇ IEEE Transactions on Circuits and Systems-Part I.

Marco Pavone

- *Conference reviewer*: IEEE Conference on Decision and Control ◊ American Control Conference ◊ International Symposium on Robotics Research ◊ Robotics: Science and Systems ◊ IEEE International Conference on Robotics and Automation ◊ IEEE/RSJ International Conference on Intelligent Robots and Systems ◊ International Workshop on the Algorithmic Foundations of Robotics ◊ Hybrid Systems: Computation and Control ◊ IFAC Symposium on Nonlinear Control Systems ◊ International Conference on Parallel Problem Solving from Nature ◊ European Conference on Artificial Life.
- *Proposal reviewer*: NSF ◊ NASA ◊ United States-Israel Binational Science Foundation ◊ Agency for Science, Technology and Research, Singapore ◊ FWO.

Advisory Boards

- Coast Autonomous (2018–2021).
- NM Robotic (2014–2021).
- PTV Group (2017–2018).
- Zoox (2015–2016).
- AeroSpy Sense & Avoid Technology GmbH (2012–2013).

Presentations

Contributed Conference Presentations

All conference papers involved a presentation (see Publications Section).

Department Seminars

1. Boston University, CISE Seminar, talk title: "On the Role of Interaction in Future Mobility Systems, from Vehicle-Centric to System-Wide Control" (Dec. 2020).
2. University of Toronto, talk title: "On Safe and Efficient Human-robot Interactions via Multimodal Intent Modeling and Reachability-based Safety Assurance" (Nov. 2020).
3. University of Pennsylvania, GRASP On Robotics Seminar, talk title: "On Safe and Efficient Human-robot Interactions via Multimodal Intent Modeling and Reachability-based Safety Assurance" (Nov. 2020).
4. University of California, Los Angeles, IPAM Workshop on Safe Operation of Connected and Autonomous Vehicle Fleets, talk title: "On Safe and Efficient Human-robot Interactions via Multimodal Intent Modeling and Reachability-based Safety Assurance" (Oct. 2020).
5. Department of Electrical and Computer Engineering, University of Southern California, talk title: "Autonomous Mobility-on-Demand Systems for Future Urban Mobility" (Apr. 2019).
6. Institute of Transportation Studies, University of California, Irvine, talk title: "Autonomous Mobility-on-Demand Systems for Future Urban Mobility" (Mar. 2019).
7. Department of Electrical and Computer Engineering, University of Southern California, talk title: "On the Role of Interaction in Future Mobility Systems, from Vehicle-Centric to System-Wide Control" (Oct. 2018).
8. Department of Aeronautics and Astronautics, Massachusetts Institute of Technology, talk title: "Planning and Decision Making for Autonomous Spacecraft and Space Robots" (Mar. 2018).
9. Paul G. Allen School of Computer Science & Engineering, University of Washington, talk title: "Planning and Decision Making for Autonomous Spacecraft and Space Robots" (Mar. 2018).
10. Decision and Control Laboratory, Georgia Institute of Technology, talk title: "Planning and Decision Making for Autonomous Spacecraft and Space Robots" (Feb. 2018).
11. Department of Mechanical and Aerospace Engineering, University of California, San Diego, talk title: "Planning and Decision Making for Autonomous Spacecraft and Space Robots" (Jan. 2018).

12. Institute of Anthropomatics and Robotics, Karlsruhe Institute of Technology, talk title: "Planning and Decision Making for Autonomous Spacecraft and Space Robots" (Dec. 2017).
13. Automatic Control Laboratory, ETH Zürich, talk title: "Planning and Decision Making for Autonomous Spacecraft and Space Robots" (Nov. 2017).
14. Politecnico di Torino, talk title: "Self-Driving Vehicles and the Future of Urban Mobility" (Nov. 2017).
15. Department of Aerospace Engineering, University of Illinois at Urbana-Champaign, talk title: "Planning and Decision Making for Autonomous Spacecraft and Space Robots" (Oct. 2017).
16. DREAM Seminar, University of California, Berkeley, talk title: "Sampling-Based Techniques for Planning and Control of Autonomous Spacecraft and Space Robots" (Nov 2016).
17. Department of Aeronautics and Astronautics, University of Washington, talk title: "Sampling-Based Techniques for Planning and Control of Autonomous Spacecraft and Space Robots" (May 2016).
18. Department of Electrical and Computer Engineering, University of New Mexico, talk title: "Sampling-Based Techniques for Planning and Control of Autonomous Spacecraft and Space Robots" (Apr. 2016).
19. Institute of Transportation Studies, University of California, Berkeley, talk title: "Models, Algorithms, and Evaluation for Autonomous Mobility-On-Demand Systems" (Feb. 2016).
20. Department of Electrical and Computer Engineering, Concordia University, talk title: "Certifiable Planning for Autonomous Vehicles" (Feb. 2016).
21. Department of Systems Engineering, Naval Postgraduate School, talk title: "Models, Algorithms, and Evaluation for Autonomous Mobility-On-Demand Systems" (Nov. 2015).
22. Laboratory for Computational Sensing and Robotics, Johns Hopkins University, talk title: "Certifiable Planning for Autonomous Vehicles" (Oct. 2015).
23. Hansen Experimental Physics Laboratory, Stanford University, talk title: "Spacecraft/Rover Hybrids for the Exploration of Small Solar System Bodies" (Oct. 2015).
24. Center for Automotive Research at Stanford, Stanford University, talk title: "Control and Evaluation of Autonomous Mobility-On-Demand Systems" (Dec. 2014).
25. Hansen Experimental Physics Laboratory, Stanford University, talk title: "Real-Time and Dependable Robotic Motion Planning: Theory and Algorithms" (Oct. 2014).
26. Department of Aerospace and Mechanical Engineering, University of Arizona, talk title: "Real-Time and Dependable Spacecraft Motion Planning: Theory and Algorithms" (Nov. 2013).
27. Aerospace Engineering Department, University of Illinois at Urbana-Champaign, talk title: "Real-Time and Dependable Spacecraft Motion Planning: Theory and Algorithms" (Oct. 2013).
28. Computer Science Department, University of California at Merced, talk title: "Dynamic and Communication-Aware Coordination of Large-Scale Mobile Robotic Networks" (Oct. 2013).
29. Department of Electrical and Computer Engineering, University of Waterloo, talk title: "Fast Marching Trees: a Fast Marching Sampling-Based Method for Optimal Motion Planning in Many Dimensions" (Sept. 2013).
30. Hansen Experimental Physics Laboratory, Stanford University, talk title: "Spacecraft/Rover Hybrids for the Exploration of Small Solar System Bodies" (Apr. 2013).
31. Center for Information and Systems Engineering, Boston University, talk title: "On Stochastic Optimal Control with Risk Constraints: Applications to Planetary Missions and Time-Consistent Formulations" (Oct. 2012).
32. Laboratory for Information and Decision Systems, Massachusetts Institute of Technology, talk title: "On Stochastic Optimal Control with Risk Constraints: Applications to Planetary Missions and Time-Consistent Formulations" (Oct. 2012).
33. SMART Centre, National University of Singapore, talk title: "Challenges to MoD systems" (Aug. 2012).
34. School of Aerospace Engineering, Georgia Institute of Technology, talk title: "Challenges for Spacecraft Autonomy and Architectures for the In-situ Exploration of Small Bodies" (Jun. 2012).
35. Institute for Computational & Mathematical Engineering, Stanford University, talk title: "Dynamic Coordination of Large-Scale Mobile Robotic Networks" (May 2012).
36. Department of Aeronautics and Astronautics, Stanford University, talk title: "Dynamic Coordination of Large-Scale Mobile Robotic Networks" (Apr. 2011).
37. Department of Mechanical Engineering, University of California at Santa Barbara, talk title: "Dynamic Vehicle Routing for Robotic Networks" (Mar. 2011).

38. Computer Science Department, University of Southern California, talk title: "Dynamic Vehicle Routing for Robotic Networks" (Feb. 2010).
39. Laboratory for Information and Decision Systems, Massachusetts Institute of Technology, talk title: "Equitable Partitioning Policies for Mobile Robotic Networks" (Jan. 2009).
40. Laboratory for Information and Decision Systems, Massachusetts Institute of Technology, talk title: "Dynamic Vehicle Routing with Customer Impatience" (Jan. 2008).
41. Laboratory for Information and Decision Systems, Massachusetts Institute of Technology, talk title: "Decentralized Policies for Geometric Pattern Formation and Path Coverage" (Jan. 2007).
42. School of Engineering and Applied Sciences, University of California at Los Angeles, talk title: "Decentralized Policies for Geometric Pattern Formation and Path Coverage" (May 2006).

Invited Presentations

• 2020

1. Conference on Decision and Control, Workshop on Control, Optimization, and Learning Methods for Emerging Mobility Systems, talk title: "Autonomous Mobility-on-Demand Systems for Future Urban Mobility" (Dec. 2020).
2. International Conference on Social Robotics, Workshop on Safe Human-Robot Interaction: Sensing, Modeling, and Learning, talk title: "On Safe and Efficient Human-robot Interactions via Multimodal Intent Modeling and Reachability-based Safety Assurance" (Nov. 2020).
3. Bay Area Robotics Symposium, talk title: "On Interaction-Aware Decision Making" (Nov. 2020).
4. DIGITALmeet, talk title: "The Road to Self-Driving Vehicles: Where Are We, and What to Expect?" (Oct. 2020).
5. IEEE RAS Summer School on Multi-Robot Systems, talk title: "Multimodal Deep Generative Models for Interaction-Aware Navigation in Crowded Environments" (Sep. 2020).
6. Autoware Meetup, talk title: "Using AI to Deal with Unpredictable Humans on the Road" (Jun. 2020).
7. International Conference on Robotics and Automation, Workshop on Long-term Human Motion Prediction, talk title: "Multimodal Deep Generative Models for Intent Prediction" (Jun. 2020).
8. International Conference on Robotics and Automation, Workshop on Perception, Action, Learning, talk title: "Multimodal Deep Generative Models for Interaction-Aware Decision Making" (Jun. 2020).
9. AAI Spring Symposium on Combining Artificial Intelligence and Machine Learning with Physics Sciences, talk title: "On safe and efficient human-robot interactions via multimodal intent modeling and reachability-based safety assurance" (Mar. 2020).
10. NVIDIA, talk title: "On safe and efficient human-robot interactions via multimodal intent modeling and reachability-based safety assurance" (Jan. 2020).

• 2019

1. Baltic-American Dialogue Program, talk title: "Self-driving Cars: Progress and Challenges" (Dec. 2019).
2. Conference on Neural Information Processing Systems, talk title: "On Safe and Efficient Human-robot Interactions via Multimodal Intent Modeling and Reachability-based Safety Assurance" (Dec. 2019).
3. Ford, talk title: "Overview of Autonomous Systems Laboratory" (Dec. 2019).
4. Bay Area Robotics Symposium, talk title: "Model-based Learning for Robot Autonomy" (Nov. 2019).
5. Politecnico di Torino, Italy, talk title: "Self-Driving Vehicles: Where Are We, and What to Expect?" (Nov. 2019).
6. 2019 American Control Conference, talk title: "Self-Driving Vehicles and the Future of Urban Mobility" (Jul. 2019).
7. Waymo, talk title: "On the Role of Interaction in Future Mobility Systems, from Vehicle-Centric to System-Wide Control" (Jun. 2019).

8. Robotics: Science and Systems Conference, talk title: "Planning and Decision Making for Autonomous Spacecraft and Space Robots" (Jun. 2019).
9. Industrial Technology Research Institute, Taiwan, talk title: "Self-Driving Vehicles and the Future of Urban Mobility" (Jun. 2019).
10. Ambrosetti, talk title: "Self-Driving Vehicles and the Future of Urban Mobility" (Mar. 2019).
11. Airbus, talk title: "Trajectory Optimization Methods for Autonomous Robotic Systems" (Feb. 2019).

• **2018**

1. SystemX Seminar at Stanford, talk title: "Planning and Decision Making for Autonomous Spacecraft and Space Robots" (Dec. 2018).
2. Bay Area Robotics Symposium, talk title: "On Infusing Safety Assurance within Probabilistic Planning Frameworks for Human-Robot Vehicle Interactions" (Nov. 2018).
3. Ford's Research Lab, talk title: "On the Role of Interaction in Future Mobility Systems, from Vehicle-Centric to System-Wide Control" (May 2018).
4. SystemX Seminar at Stanford, talk title: "On the Role of Interaction in Future Mobility Systems, from Vehicle-Centric to System-Wide Control" (Apr. 2018).
5. Google, talk title: "On the Role of Interaction in Future Mobility Systems, from Vehicle-Centric to System-Wide Control" (Apr. 2018).
6. NASA Jet Propulsion Laboratory, talk title: "Assistive Free-Flyers with Gecko-Inspired Adhesive Appendages for Automated Logistics in Space" (Apr. 2018).
7. J. P. Morgan, talk title: "Self-Driving Vehicles and the Future of Urban Mobility" (Mar. 2018).
8. Microsoft Research, talk title: "Planning and Decision Making for Autonomous Spacecraft and Space Robots" (Mar. 2018).
9. Digital Cities Summit at Stanford, talk title: "Autonomous Mobility-on-Demand Systems for Future Urban Mobility" (Feb. 2018).
10. Cyngn, talk title: "On the Role of Interaction in Future Mobility Systems, from Vehicle-Centric to System-Wide Control" (Feb. 2018).

• **2017**

1. Zoox, talk title: "On the Role of Interaction in Future Mobility Systems, from Vehicle-Centric to System-Wide Control" (Dec. 2017).
2. Bay Area Robotics Symposium, talk title: "Risk-Sensitive Decision Making for Autonomous Robots" (Nov. 2017).
3. Italian Embassy in Washington D.C., talk title: "Algorithmic Foundations for Real-Time and Dependable Spacecraft Motion Planning" (Nov. 2017).
4. NASA Ames Research Center, Workshop on *Convergent Solutions for Developing Trustworthy Automated Systems*, talk title: "Planning and Control for Autonomous Spacecraft and Space Robots" (Oct. 2017).
5. Qualcomm, talk title: "GPU-enabled Planning and Decision-Making Algorithms for Autonomous Robotic Systems" (Aug. 2017).
6. ONR Workshop on *Science of Autonomy*, talk title: "Risk-Aware Planning and Control for Autonomous Systems: Models and Real-Time Algorithms" (Aug. 2017).
7. ONR Workshop on *Science of Autonomy*, talk title: "Proactive Decision Making for Autonomous Systems: a Formal Methods Approach" (Aug. 2017).
8. University of Michigan, AIAA Workshop on *Intelligent Systems*, talk title: "Planning and Control Techniques for Autonomous Spacecraft and Space Robots" (July 2017).
9. RSS Workshop on *Bridging the Gap in Space Robotics*, talk title: "Sampling-Based Techniques for Planning and Control of Autonomous Spacecraft and Space Robots" (July 2017).

10. RSS Workshop on *Resilient Intelligence in Autonomous Systems: Challenges and Opportunities*, talk title: "How Should a Robot Assess Risk? Towards an Axiomatic Theory of Risk in Robotics" (July 2017).
11. PTV, talk title: "Autonomous Mobility-on-Demand Systems: Operational and Economic Aspects" (July 2017).
12. NASA Johnson Space Center, talk title: "Sampling-Based Techniques for Planning and Control of Autonomous Spacecraft and Space Robots" (June 2017).
13. Space Systems Loral, talk title: "Sampling-Based Techniques for Planning and Control of Autonomous Spacecraft and Space Robots" (Apr. 2017).

• **2016**

1. Bay Area Robotics Symposium, talk title: "Planning and Control of Autonomous Spacecraft and Space Robots (and Beyond)" (Nov. 2016).
2. CROSS Research Symposium at University of California, Santa Cruz, talk title: "Models, Algorithms, and Evaluation for Autonomous Mobility-On-Demand Systems" (Oct. 2016).
3. Italian Embassy in Washington D.C., talk title: "Algorithmic Foundations for Real-Time and Dependable Spacecraft Motion Planning" (Oct. 2016).
4. NASA Ames Research Center, talk title: "Sampling-Based Techniques for Planning and Control of Autonomous Spacecraft and Space Robots" (Sept. 2016).
5. Northrop Grumman Corporation, talk title: "Sampling-Based Techniques for Planning and Control of Autonomous Spacecraft and Space Robots" (Sept. 2016).
6. ARL Workshop on *Heterogeneity, Diversity and Resilience in Multi-Robot Systems*, talk title: "Models, Algorithms, and Evaluation for Autonomous Mobility-On-Demand Systems" (Aug. 2016).
7. NASA Goddard Space Flight Center, talk title: "Sampling-Based Techniques for Planning and Control of Autonomous Spacecraft and Space Robots" (Aug. 2016).
8. ONR Workshop on *Science of Autonomy*, talk title: "Risk-Aware Planning and Control for Autonomous Systems: Models and Real-Time Algorithms" (Aug. 2016).
9. Johns Hopkins University, Applied Physics Laboratory, 15th Meeting of the NASA Small Bodies Assessment Group, talk title: "Spacecraft/Rover Hybrids for the Exploration of Small Solar System Bodies" (June 2016).

• **2015**

1. Institute for Pure & Applied Mathematics, University of California, Los Angeles, talk title: "Models, Algorithms, and Evaluation for Autonomous Mobility-On-Demand Systems" (Nov. 2015).
2. Oak Ridge National Laboratory, talk title: "Models and Control Methods to Coordinate Fleets of Self-Driving Vehicles in Future Transportation Networks" (Nov 2015).
3. NASA NIAC Symposium, talk title: "Spacecraft/Rover Hybrids for the Exploration of Small Solar System Bodies" (Oct. 2015).
4. Italian Embassy in Washington D.C., talk title: "Models, Algorithms, and Evaluation for Autonomous Mobility-On-Demand Systems" (Oct. 2015).
5. Bay Area Robotics Symposium, talk title: "Models, Algorithms, and Evaluation for Autonomous Mobility-On-Demand Systems" (Oct. 2015).
6. NASA Ames Research Center, talk title: "Spacecraft/Rover Hybrids for the Exploration of Small Solar System Bodies" (Aug. 2015).
7. NASA Headquarters, talk title: "Spacecraft/Rover Hybrids for the Exploration of Small Solar System Bodies" (July 2015).
8. Workshop on *Optimal Robot Motion Planning* at ICRA '15, talk title: "Deterministic Sampling-Based Motion Planning: Optimality, Complexity, and Performance" (May 2015).
9. Workshop on *Beyond Geometric Constraints: Planning for Solving Complex Tasks, Reducing Uncertainty, and Generating Informative Paths & Policies* at ICRA '15, talk title: "Monte Carlo Motion Planning for Robot Motion Optimization Under Uncertainty" (May 2015).

10. King Abdulaziz City for Science and Technology, talk title: "Drag-Free ATC and Formation Flying Technologies" (Mar. 2015).
11. NASA NIAC Symposium, talk title: "Spacecraft/Rover Hybrids for the Exploration of Small Solar System Bodies" (Jan. 2015).
12. Lockheed Martin, talk title: "Planning and Control for Next Generation Space Robots" (Jan. 2015).

• **2014**

1. Qualcomm, talk title: "Real-Time and Dependable Robotic Motion Planning: Theory and Algorithms" (Nov. 2014).
2. Session on *Optimization in Dynamics and Control* at INFORMS '14, talk title: "Optimal Sampling-Based Motion Planning under Differential Constraints" (Nov. 2014).
3. Stanford-Berkeley Robotics Symposium, talk title: "Planning and Control for Spacecraft and Space Robots" (Oct. 2014).
4. École Nationale de l'Aviation Civile, talk title: "Real-Time and Dependable Spacecraft Motion Planning: Theory and Algorithms" (Oct. 2014).
5. Mobility and Robotic Systems Section, NASA Jet Propulsion Laboratory, talk title: "Spacecraft/Rover Hybrids for the Exploration of Small Solar System Bodies" (Sept. 2014).
6. NASA Headquarters, talk title: "Algorithmic Foundations for Real-Time and Dependable Spacecraft Motion Planning" (July 2014).
7. Workshop on *Humans and Sensing in Cyber-Physical Systems* at RSS '14, talk title: "On the Societal and Engineering Impact of Autonomous Cars" (July 2014).
8. Workshop on *Constrained Decision-making in Robotics: Models, Algorithms, and Applications* at RSS '14, talk title: "Risk-Averse and Risk-Constrained Stochastic Optimal Control" (July 2014).
9. Daimler Foundation, talk title: "The Value of Robotic Mobility-On-Demand Systems" (Feb. 2014).
10. NASA Ames Research Center, talk title: "Real-Time and Dependable Spacecraft Motion Planning: Theory and Algorithms" (Jan. 2014).

• **2013**

1. NASA Goddard Space Flight Center, talk title: "Real-Time and Dependable Spacecraft Motion Planning: Theory and Algorithms" (Sept. 2013).
2. NASA Headquarters, talk title: "Algorithmic Foundations for Real-Time and Dependable Spacecraft Motion Planning" (July 2013).
3. SETI Institute, talk title: "Surface Exploration of Small Solar System Bodies: Challenges and Prospects" (Feb. 2013).

• **2010-2012**

1. Draper Laboratory, talk title: "Internally-Actuated Rovers for All-Access Surface Mobility: Theory and Experimentation" (Oct. 2012).
2. Aurora Flight Sciences, talk title: "Internally-Actuated Rovers for All-Access Surface Mobility: Theory and Experimentation" (Oct. 2012).
3. NASA Ames Research Center, talk title: "Spacecraft/Rover Hybrids for the Exploration of Small Solar System Bodies" (May 2012).
4. NASA NIAC Symposium, talk title: "Spacecraft/Rover Hybrids for the Exploration of Small Solar System Bodies" (Mar. 2012).
5. Research & Development Division, AgustaWestland, talk title: "Cooperative Control of Large-Scale Robotic Networks" (Mar. 2010).
6. Mobility and Robotic Systems Section, NASA Jet Propulsion Laboratory, talk title: "Dynamic Vehicle Routing for Robotic Networks" (Jan. 2010).

In the News

Dr. Pavone's work has been reported in many popular press outlets, including: ABC ◊ NBC ◊ The Economist ◊ Forbes ◊ Reuters ◊ San Francisco Chronicle ◊ IEEE Spectrum ◊ Popular Science ◊ Huffington Post ◊ The Times of India ◊ MIT Technology Review ◊ The Verge ◊ Universe Today.

Publications

All publications can be found at <http://asl.stanford.edu/publications/>.

Refereed Journal Publications

- [1] Brown, R. A., Rossi, F., Solovey, K., Tsao, M., Wolf, M. T., Pavone, M., "On Local Computation for Network-Structured Convex Optimization in Multi-Agent Systems". In: *IEEE Transactions on Control of Network Systems* 8.2 (2021), pp. 542–554.
- [2] Choudhury, S., Solovey, K., Kochenderfer, M., "Efficient Large-Scale Multi-Drone Delivery Using Transit Networks". In: *Journal of Artificial Intelligence Research* (2021).
- [3] Estandia, A., Schiffer, M., Rossi, F., Luke, J., Kara, E. C., Rajagopal, R., Pavone, M., "On the Interaction between Autonomous Mobility on Demand Systems and Power Distribution Networks – An Optimal Power Flow Approach". In: *IEEE Transactions on Control of Network Systems* (2021).
- [4] Ivanovic, B., Leung, K., Schmerling, E., Pavone, M., "Multimodal Deep Generative Models for Trajectory Prediction: A Conditional Variational Autoencoder Approach". In: *IEEE Robotics and Automation Letters* 6.2 (2021), pp. 295–302.
- [5] Schilliger, J., Lew, T., Richards, S. M., Hanggi, S., Pavone, M., Onder, C., "Control Barrier Functions for Cyber-Physical Systems and Applications to NMPC". In: *IEEE Robotics and Automation Letters* (2021).
- [6] Leung, K., Schmerling, E., Zhang, M., Chen, M., Talbot, J., Gerdes, J. C., Pavone, M., "On Infusing Reachability-Based Safety Assurance within Planning Frameworks for Human-Robot Vehicle Interactions". In: *Int. Journal of Robotics Research* 39 (10–11 2020), pp. 1326–1345.
- [7] Mote, M., Egerstedt, M., Feron, E., Bylard, A., Pavone, M., "Collision-Inclusive Trajectory Optimization for Free-Flying Spacecraft". In: *AIAA Journal of Guidance, Control, and Dynamics* (2020).
- [8] Rossi, F., Iglesias, R., Alizadeh, M., Pavone, M., "On the Interaction Between Autonomous Mobility-on-Demand Systems and the Power Network: Models and Coordination Algorithms". In: *IEEE Transactions on Control of Network Systems* 7.1 (2020), pp. 384–397.
- [9] Singh, S., Richards, S. M., Sindhvani, V., Slotine, J.-J. E., Pavone, M., "Learning Stabilizable Non-linear Dynamics with Contraction-Based Regularization". In: *Int. Journal of Robotics Research* (2020).
- [10] Zardini, G., Lanzetti, N., Censi, A., Frazzoli, E., Pavone, M., "Co-Design to Enable User-Friendly Tools to Assess the Impact of Future Mobility Solutions". In: *IEEE Transactions on Intelligent Transportation Systems* (Aug. 21, 2020).
- [11] Allen, R., Pavone, M., "A Real-Time Framework for Kinodynamic Planning in Dynamic Environments with Application to Quadrotor Obstacle Avoidance". In: *Robotics and Autonomous Systems* 115 (2019), pp. 174–193.
- [12] Chinchali, S. P., Livingston, S. C., Chen, M., Pavone, M., "Multi-objective optimal control for proactive decision-making with temporal logic models". In: *Int. Journal of Robotics Research* 38.12-13 (2019), pp. 1490–1512.
- [13] Ichter, B., Pavone, M., "Robot Motion Planning in Learned Latent Spaces". In: *IEEE Robotics and Automation Letters* (2019).

- [14] Iglesias, R., Rossi, F., Zhang, R., Pavone, M., “A BCMP Network Approach to Modeling and Controlling Autonomous Mobility-on-Demand Systems”. In: *Int. Journal of Robotics Research* 38.2–3 (2019), pp. 357–374.
- [15] Salazar, M., Lanzetti, N., Rossi, F., Schiffer, M., Pavone, M., “Intermodal Autonomous Mobility-on-Demand”. In: *Special Issue 21st IEEE Intelligent Transportation Systems Conference (ITSC 2018)* (Apr. 14, 2019).
- [16] Chow, Y., Ghavamzadeh, M., Janson, L., Pavone, M., “Risk-Constrained Reinforcement Learning with Percentile Risk Criteria”. In: *Journal of Machine Learning Research* (2018).
- [17] Janson, L., Ichter, B., Pavone, M., “Deterministic Sampling-Based Motion Planning: Optimality, Complexity, and Performance”. In: *Int. Journal of Robotics Research* 37.1 (2018), pp. 46–61.
- [18] Jorgensen, S., Chen, R., Milam, M., Pavone, M., “The Team Surviving Orienteers Problem: Routing Teams of Robots in Uncertain Environments with Survival Constraints”. In: *Autonomous Robots* 42.4 (2018), pp. 927–952.
- [19] Rossi, F., Zhang, R., Hindy, Y., Pavone, M., “Routing Autonomous Vehicles in Congested Transportation Networks: Structural Properties and Coordination Algorithms”. In: *Autonomous Robots* 42.7 (2018), pp. 1427–1442.
- [20] Singh, S., Chow, Y.-L., Majumdar, A., Pavone, M., “A Framework for Time-Consistent, Risk-Sensitive Model Predictive Control: Theory and Algorithms”. In: *IEEE Transactions on Automatic Control* 64.7 (2018). Extended version available at: <http://arxiv.org/abs/1703.01029>, pp. 2905–2912.
- [21] Singh, S., Lacotte, J., Majumdar, A., Pavone, M., “Risk-sensitive Inverse Reinforcement Learning via Semi- and Non-Parametric Methods”. In: *Int. Journal of Robotics Research* 37.13 (2018), pp. 1713–1740.
- [22] Zhang, R., Rossi, F., Pavone, M., “Analysis, Control, and Evaluation of Mobility-on-Demand Systems: a Queueing-Theoretical Approach”. In: *IEEE Transactions on Control of Network Systems* (2018).
- [23] Starek, J. A., Schmerling, E., Maher, G. D., Barbee, B. W., Pavone, M., “Fast, Safe, Propellant-Efficient Spacecraft Motion Planning Under Clohessy-Wiltshire-Hill Dynamics”. In: *AIAA Journal of Guidance, Control, and Dynamics* 40.2 (2017), pp. 418–438.
- [24] Allen, R., Pavone, M., Schwager, M., “Flying Smartphones: When Portable Computing Sprouts Wings”. In: *IEEE Pervasive Computing* 15.3 (2016), pp. 83–88.
- [25] Hockman, B., Frick, A., Nesnas, I. A. D., Pavone, M., “Design, Control, and Experimentation of Internally-Actuated Rovers for the Exploration of Low-Gravity Planetary Bodies”. In: *Journal of Field Robotics* 34.1 (2016), pp. 5–24.
- [26] Zhang, R., Pavone, M., “Control of Robotic Mobility-on-Demand Systems: A Queueing-Theoretical Perspective”. In: *Int. Journal of Robotics Research* 35.1–3 (2016), pp. 186–203.
- [27] Janson, L., Schmerling, E., Clark, A., Pavone, M., “Fast Marching Tree: A Fast Marching Sampling-Based Method for Optimal Motion Planning in Many Dimensions”. In: *Int. Journal of Robotics Research* 34.7 (2015), pp. 883–921.
- [28] Ono, M., Pavone, M., Kuwata, Y., Balaram, J., “Chance-Constrained Dynamic Programming with Application to Risk-Aware Robotic Space Exploration”. In: *Autonomous Robots* 39.4 (2015), pp. 555–571.
- [29] Chow, Y., Pavone, M., Sadler, B. M., Carpin, S., “Trading Safety Versus Performance: Rapid Deployment of Robotic Swarms with Robust Performance Constraints”. In: *ASME Journal of Dynamic Systems, Measurement, and Control* 137.3 (2014), pp. 031005.1–031005.11.
- [30] Treleaven, K., Pavone, M., Frazzoli, E., “Asymptotically Optimal Algorithms for One-to-One Pickup and Delivery Problems with Applications to Transportation Systems”. In: *IEEE Transactions on Automatic Control* 58.9 (2013), pp. 2261–2276.

- [31] Pavone, M., Smith, S. L., Frazzoli, E., Rus, D., “Robotic Load Balancing for Mobility-on-Demand Systems”. In: *Int. Journal of Robotics Research* 31.7 (2012), pp. 839–854.
- [32] Bullo, F., Frazzoli, E., Pavone, M., Savla, K., Smith, S. L., “Dynamic Vehicle Routing for Robotic Systems”. In: *Proc. of the IEEE* 99.9 (2011), pp. 1482–1504.
- [33] Pavone, M., Arsie, A., Frazzoli, E., Bullo, F., “Distributed Algorithms for Environment Partitioning in Mobile Robotic Networks”. In: *IEEE Transactions on Automatic Control* 56.8 (2011), pp. 1834–1848.
- [34] Pavone, M., Frazzoli, E., Bullo, F., “Adaptive and Distributed Algorithms for Vehicle Routing in a Stochastic and Dynamic Environment”. In: *IEEE Transactions on Automatic Control* 56.6 (2011), pp. 1259–1274.
- [35] Ramirez, J. L., Pavone, M., Frazzoli, E., Miller, D. W., “Distributed Control of Spacecraft Formations via Cyclic Pursuit: Theory and Experiments”. In: *AIAA Journal of Guidance, Control, and Dynamics* 33.5 (2010), pp. 1655–1669.
- [36] Smith, S. L., Pavone, M., Bullo, F., Frazzoli, E., “Dynamic Vehicle Routing with Priority Classes of Stochastic Demands”. In: *SIAM Journal on Control and Optimization* 48.5 (2010), pp. 3224–3245.
- [37] Pavone, M., Bisnik, N., Frazzoli, E., Isler, V., “A Stochastic and Dynamic Vehicle Routing Problem with Time Windows and Customer Impatience”. In: *Journal of Mobile Networks and Applications* 14.3 (2009), pp. 350–364.
- [38] Pavone, M., Savla, K., Frazzoli, E., “Sharing the Load”. In: *IEEE Robotics and Automation Magazine* 16.2 (2009), pp. 52–61.
- [39] Pavone, M., Frazzoli, E., “Decentralized Policies for Geometric Pattern Formation and Path Coverage”. In: *ASME Journal of Dynamic Systems, Measurement, and Control* 129.5 (2007), pp. 633–643.
- [40] Pavone, M., Arena, P., Fortuna, L., Frasca, M., Patanè, L., “Climbing Obstacle in Bio-robots via CNN and Adaptive Attitude Control”. In: *Int. Journal of Circuit Theory and Applications* 34.1 (2006), pp. 109–125.
- [41] Pavone, M., Arena, P., Patanè, L., “An Innovative Mechanical and Control Architecture for a Biomimetic Hexapod for Planetary Exploration”. In: *Space Technology* 26.1-2 (2006), pp. 13–24.

Refereed Journal Publications in Press/Accepted

- [42] Cauligi, A., Culbertson, P., Schmerling, E., Schwager, M., Stellato, B., Pavone, M., “CoCo: Online Mixed-Integer Control via Supervised Learning”. In: *IEEE Robotics and Automation Letters* 7.2 (2022), pp. 1447–1454.
- [43] Lew, T., Sharma, A., Harrison, J., Bylard, A., Pavone, M., “Safe Active Dynamics Learning and Control: A Sequential Exploration-Exploitation Framework”. In: *IEEE Transactions on Robotics* (2022). In Press.
- [44] Malyuta, D., Reynolds, T. P., Szmuk, M., Lew, T., Bonalli, R., Pavone, M., Acikmese, B., “Convex Optimization for Trajectory Generation”. In: *IEEE Control Systems Magazine* (2022). In Press.
- [45] Wollenstein-Betech, S., Salazar, M., Houshmand, A., Pavone, M., Paschalidis, I. C., Cassandras, C. G., “Routing and Rebalancing Intermodal Autonomous Mobility-on-Demand Systems in Mixed Traffic”. In: *IEEE Robotics and Automation Letters* (2022). In Press.
- [46] Zhao, P., Lakshmanan, A., Ackerman, K., Gahlawat, A., Pavone, M., Hovakimyan, N., “Tube-Certified Trajectory Tracking for Nonlinear Systems With Robust Control Contraction Metrics”. In: *IEEE Robotics and Automation Letters* (2022). In press.
- [47] Chapman, M. P., Bonalli, R., Smith, K. M., Yang, I., Pavone, M., Tomlin, C. J., “Risk-sensitive safety analysis using Conditional Value-at-Risk”. In: *IEEE Transactions on Automatic Control* (2021). In Press.

- [48] Leung, K., Aréchiga, N., Pavone, M., “Backpropagation through signal temporal logic specifications: Infusing logical structure into gradient-based methods”. In: *Int. Journal of Robotics Research* (2021). In Press.
- [49] Tsao, M., Yang, K., Zoepf, S., Pavone, M., “Trust but Verify: Cryptographic Data Privacy for Mobility Management”. In: *IEEE Transactions on Control of Network Systems* (2021). In press.
- [50] Zardini, G., Lanzetti, N., Pavone, M., Frazzoli, E., “Analysis and Control of Autonomous Mobility-on-Demand Systems: A Review”. In: *Annual Review of Control, Robotics, and Autonomous Systems* (2021).
- [51] Pavone, M., Saberi, A., Schiffer, M., Tsao, M., “Online Hypergraph Matching with Delays”. In: *Operations Research* (Dec. 2021). In press.
- [52] Schiffer, M., Boysen, N., Laporte, G., Pavone, M., “Optimal picking policies in e-commerce warehouses”. In: *Management Science* (2018). In Press.

Refereed Journal Publications Submitted

- [53] Richards, S. M., Azizan, N., Slotine, J.-J. E., Pavone, M., “Control-Oriented Meta-Learning”. In: *Int. Journal of Robotics Research* (2023). Submitted.
- [54] Dayan, D., Solovey, K., Pavone, M., Halperin, D., “Near-Optimal Multi-Robot Motion Planning with Finite Sampling”. In: *Int. Journal of Robotics Research* (2022). Submitted.
- [55] Jalota, D., Paccagnan, D., Schiffer, M., Pavone, M., “On Online Traffic Routing: Deterministic Limits and Data-driven Enhancements”. In: *Inform Journal on Computing* (2022). Submitted.
- [56] Luo, R., Bhatnagar, A., Wang, H., Xiong, C., Savarese, S., Bai, Y., Zhao, S., Ermon, S., Schmerling, E., Pavone, M., “Local Calibration: Metrics and Recalibration”. In: (2022). Submitted.
- [57] Selim, M., Alanwar, A., Kousik, S., Gao, G., Pavone, M., Johansson, K., “Safe Reinforcement Learning Using Black-Box Reachability Analysis”. In: *IEEE Robotics and Automation Letters* (2022). Submitted.
- [58] Bonalli, R., Lew, T., Pavone, M., “Analysis of Theoretical and Numerical Properties of Sequential Convex Programming for Continuous-Time Optimal Control”. In: *IEEE Transactions on Automatic Control* (2021). Submitted.
- [59] Bonalli, R., Lew, T., Pavone, M., “Sequential Convex Programming For Non-Linear Stochastic Optimal Control”. In: *ESAIM: Control, Optimisation & Calculus of Variations* (2021). Submitted.
- [60] Chen, T. G., Cauligi, A., Suresh, S. A., Pavone, M., Cutkosky, M. R., “Testing Gecko-Inspired Adhesives with Astrobee Aboard the ISS”. In: *IEEE Robotics and Automation Magazine* (2021).
- [61] Jalota, D., Pavone, M., Qi, Q., Ye, Y., “Fisher Markets with Linear Constraints: Equilibrium Properties and Efficient Distributed Algorithms”. In: *Games and Economic Behavior* (2021). Submitted.
- [62] Lorenzetti, J., McClellan, A., Farhat, C., Pavone, M., “Linear Reduced Order Model Predictive Control”. In: *IEEE Transactions on Automatic Control* (2021). Submitted.
- [63] McClellan, A., Lorenzetti, J., Pavone, M., Farhat, C., “A Physics-Based Digital Twin for Model Predictive Control of Autonomous Unmanned Aerial Vehicle Landing”. In: *Philosophical Transactions of the Royal Society A* (2021). Submitted.
- [64] Rossi, F., Bandyopadhyay, S., Wolf, M. T., Pavone, M., “Multi-Agent Algorithms for Collective Behavior - A structural and application-focused atlas”. In: (2021). Submitted.
- [65] Jorgensen, S., Pavone, M., “The Matroid Team Servicing Orienteers Problem and its Variants: Constrained Routing of Heterogeneous Teams with Risky Traversal”. In: *Int. Journal of Robotics Research* (2019). Submitted.
- [66] Singh, S., Landry, B., Majumdar, A., Slotine, J.-J. E., Pavone, M., “Robust Feedback Motion Planning via Contraction Theory”. In: *Int. Journal of Robotics Research* (2019). Submitted.

Refereed Conference/Symposia Proceedings

- [67] Bylard, A., Bonalli, R., Pavone, M., “Composable Geometric Motion Policies using Multi-Task Pull-back Bundle Dynamical Systems”. In: *Proc. IEEE Conf. on Robotics and Automation*. 2021.
- [68] Cheng, J., Pavone, M., Katti, S., Chinchali, S., Tang, A., “Data Sharing and Compression for Cooperative Networked Control”. In: *Conf. on Neural Information Processing Systems*. 2021.
- [69] Dai, H., Landry, B., Yang, L., Pavone, M., Tedrake, R., “Lyapunov-Stable Neural-Network Control”. In: *Robotics: Science and Systems*. 2021.
- [70] Dayan, D., Solovey, K., Pavone, M., Halperin, D., “Near-Optimal Multi-Robot Motion Planning with Finite Sampling”. In: *Proc. IEEE Conf. on Robotics and Automation*. 2021.
- [71] Gammelli, D., Yang, K., Harrison, J., Rodrigues, F., Pereira, F. C., Pavone, M., “Graph Neural Network Reinforcement Learning for Autonomous Mobility-on-Demand Systems”. In: *Proc. IEEE Conf. on Decision and Control*. 2021.
- [72] Jalota, D., Solovey, K., Gopalakrishnan, K., Zoepf, S., Balakrishnan, H., Pavone, M., “When Efficiency meets Equity in Congestion Pricing and Revenue Refunding Schemes”. In: *ACM Conf. on Equity and Access in Algorithms, Mechanisms, and Optimization*. Submitted. 2021.
- [73] Landry, B., Dai, H., Pavone, M., “SEAGuL: Sample Efficient Adversarially Guided Learning of Value Functions”. In: *Learning for Dynamics & Control Conference*. 2021.
- [74] Luke, J., Salazar, M., Rajagopal, R., Pavone, M., “Joint Optimization of Autonomous Electric Vehicle Fleet Operations and Charging Station Siting”. In: *Proc. IEEE Int. Conf. on Intelligent Transportation Systems*. 2021.
- [75] Nakanoya, M., Chinchali, S., Anemogiannis, A., Datta, A., Katti, S., Pavone, M., “Task-relevant Representation Learning for Networked Robotic Perception”. In: *Robotics: Science and Systems*. 2021.
- [76] Richards, S. M., Azizan, N., Slotine, J.-J. E., Pavone, M., “Adaptive-Control-Oriented Meta-Learning for Nonlinear Systems”. In: *Robotics: Science and Systems*. 2021.
- [77] Roelofs, S., Landry, B., Jalil, M. K., Martin, A., Koppaka, S., Tang, S. K. Y., Pavone, M., “Vision-based Autonomous Disinfection of High Touch Surfaces in Indoor Environments”. In: *Int. Conf. on Control, Automation and Systems*. 2021.
- [78] Schaefer, S., Leung, K., Ivanovic, B., Pavone, M., “Leveraging Neural Network Gradients within Trajectory Optimization for Proactive Human-Robot Interactions”. In: *Proc. IEEE Conf. on Robotics and Automation*. 2021.
- [79] Sharma, A., Azizan, N., Pavone, M., “Sketching Curvature for Efficient Out-of-Distribution Detection for Deep Neural Networks”. In: *Proc. Conf. on Uncertainty in Artificial Intelligence*. 2021.
- [80] Solovey, K., Bandyopadhyay, S., Rossi, F., Wolf, M. T., Pavone, M., “Fast Near-Optimal Heterogeneous Task Allocation via Flow Decomposition”. In: *Proc. IEEE Conf. on Robotics and Automation*. 2021.
- [81] Tonkens, S., Lorenzetti, J., Pavone, M., “Soft Robot Optimal Control Via Reduced Order Finite Element Models”. In: *Proc. IEEE Conf. on Robotics and Automation*. 2021.
- [82] Yang, K., Tsao, M., Xu, X., Pavone, M., “Real-Time Control of Mixed Fleets in Mobility-on-Demand Systems”. In: *Proc. IEEE Int. Conf. on Intelligent Transportation Systems*. Extended Version, Available at <https://arxiv.org/abs/2008.08131>. 2021.
- [83] Banerjee, S., Harrison, J., Furlong, P. M., Pavone, M., “Adaptive Meta-Learning for Identification of Rover-Terrain Dynamics”. In: *Int. Symp. on Artificial Intelligence, Robotics and Automation in Space*. 2020.
- [84] Banerjee, S., Lew, T., Bonalli, R., Alfaadhel, A., Alomar, I. A., Shageer, H. M., Pavone, M., “Learning-based Warm-Starting for Fast Sequential Convex Programming and Trajectory Optimization”. In: *IEEE Aerospace Conference*. 2020.

- [85] Boewing, F., Schiffer, M., Salazar, M., Pavone, M., “A Vehicle Coordination and Charge Scheduling Algorithm for Electric Autonomous Mobility-on-Demand Systems”. In: *American Control Conference*. 2020.
- [86] Brown, R. A., Rossi, F., Solovey, K., Wolf, M. T., Pavone, M., “Exploiting Locality and Structure for Distributed Optimization in Multi-Agent Systems”. In: *European Control Conference*. 2020.
- [87] Cauligi, A., Chen, T., Suresh, S. A., Dille, M., Ruiz, R. G., Vargas, A. M., Pavone, M., Cutkosky, M. R., “Design and Development of a Gecko-Adhesive Gripper for the Astrobee Free-Flying Robot”. In: *Int. Symp. on Artificial Intelligence, Robotics and Automation in Space*. 2020.
- [88] Cauligi, A., Culbertson, P., Stellato, B., Bertsimas, D., Schwager, M., Pavone, M., “Learning Mixed-Integer Convex Optimization Strategies for Robot Planning and Control”. In: *Proc. IEEE Conf. on Decision and Control*. 2020.
- [89] Chinchali, S., Pergament, E., Nakanoya, M., Cidon, E., Zhang, E., Bharadia, D., Pavone, M., Katti, S., “Sampling Training Data for Distributed Learning between Robots and the Cloud”. In: *Int. Symp. on Experimental Robotics*. 2020.
- [90] Choudhury, S., Solovey, K., Kochenderfer, M., “Efficient Large-Scale Multi-Drone Delivery Using Transit Networks”. In: *Proc. IEEE Conf. on Robotics and Automation*. 2020.
- [91] Dai, H., Landry, B., Pavone, M., Tedrake, R., “Counter-Example Guided Synthesis of Neural Network Lyapunov Functions for Piecewise Linear Systems”. In: *Proc. IEEE Conf. on Decision and Control*. 2020.
- [92] DeCastro, J., Leung, K., Aréchiga, N., Pavone, M., “Interpretable Policies from Formally-Specified Temporal Properties”. In: *Proc. IEEE Int. Conf. on Intelligent Transportation Systems*. 2020.
- [93] Elhafsi, A., Ivanovic, B., Janson, L., Pavone, M., “Map-Predictive Motion Planning in Unknown Environments”. In: *Proc. IEEE Conf. on Robotics and Automation*. 2020.
- [94] Harrison, J., Sharma, A., Finn, C., Pavone, M., “Continuous Meta-Learning without Tasks”. In: *Conf. on Neural Information Processing Systems*. Submitted. 2020.
- [95] Itkina, M., Ivanovic, B., Senanayake, R., Kochenderfer, M. J., Pavone, M., “Evidential Sparsification of Multimodal Latent Spaces in Conditional Variational Autoencoders”. In: *Conf. on Neural Information Processing Systems*. 2020.
- [96] Ivanovic, B., Elhafsi, A., Rosman, G., Gaidon, A., Pavone, M., “MATS: An Interpretable Trajectory Forecasting Representation for Planning and Control”. In: *Conf. on Robot Learning*. 2020.
- [97] Jalota, D., Pavone, M., Qi, Q., Ye, Y., “Markets for Efficient Public Good Allocation with Social Distancing”. In: *The Conference on Web and Internet Economics (WINE)*. Submitted. 2020.
- [98] Leung, K., Aréchiga, N., Pavone, M., “Back-propagation through signal temporal logic specifications: Infusing logical structure into gradient-based methods”. In: *Workshop on Algorithmic Foundations of Robotics*. 2020.
- [99] Lew, T., Bonalli, R., Pavone, M., “Chance-Constrained Sequential Convex Programming for Robust Trajectory Optimization”. In: *European Control Conference*. 2020.
- [100] Lew, T., Pavone, M., “Sampling-based Reachability Analysis: A Random Set Theory Approach with Adversarial Sampling”. In: *Conf. on Robot Learning*. 2020.
- [101] Lorenzetti, J., McClellan, A., Farhat, C., Pavone, M., “UAV Aircraft Carrier Landing Using CFD-Based Model Predictive Control”. In: *AIAA Scitech Forum*. 2020.
- [102] Lorenzetti, J., Pavone, M., “A Simple and Efficient Tube-based Robust Output Feedback Model Predictive Control Scheme”. In: *European Control Conference*. 2020.
- [103] Lorenzetti, J., Pavone, M., “Error Bounds for Reduced Order Model Predictive Control”. In: *Proc. IEEE Conf. on Decision and Control*. 2020.

- [104] McClellan, A., Lorenzetti, J., Pavone, M., Farhat, C., “Projection-based Model Order Reduction for Flight Dynamics and Model Predictive Control”. In: *AIAA Scitech Forum*. 2020.
- [105] Nishimura, H., Ivanovic, B., Gaidon, A., Pavone, M., Schwager, M., “Risk-Sensitive Sequential Action Control with Multi-Modal Human Trajectory Forecasting for Safe Crowd-Robot Interaction”. In: *IEEE/RSJ Int. Conf. on Intelligent Robots & Systems*. 2020.
- [106] Pavone, M., Saberi, A., Schiffer, M., Tsao, M., “Online Hypergraph Matching with Delays”. In: *The Conference on Web and Internet Economics (WINE)*. 2020.
- [107] Salzmann, T., Ivanovic, B., Chakravarty, P., Pavone, M., “Trajectron++: Dynamically-Feasible Trajectory Forecasting With Heterogeneous Data”. In: *European Conf. on Computer Vision*. 2020.
- [108] Solovey, K., Janson, L., Schmerling, E., Frazzoli, E., Pavone, M., “Revisiting the Asymptotic Optimality of RRT*”. In: *Proc. IEEE Conf. on Robotics and Automation*. 2020.
- [109] Tsao, M., Solovey, K., Pavone, M., “Sample Complexity of Probabilistic Roadmaps via Epsilon-nets”. In: *Proc. IEEE Conf. on Robotics and Automation*. 2020.
- [110] Verbruggen, F. J. R., Salazar, M., Pavone, M., Hofman, T., “Joint Design and Control of Electric Vehicle Propulsion Systems”. In: *European Control Conference*. 2020.
- [111] Wang, X., Leung, K., Pavone, M., “Infusing Reachability-Based Safety into Planning and Control for Multi-agent Interactions”. In: *IEEE/RSJ Int. Conf. on Intelligent Robots & Systems*. 2020.
- [112] Wollenstein-Betech, S., Houshmand, A., Salazar, M., Pavone, M., Cassandras, C. G., Paschalidis, I. C., “Congestion-aware Routing and Rebalancing of Autonomous Mobility-on-Demand Systems in Mixed Traffic”. In: *Proc. IEEE Int. Conf. on Intelligent Transportation Systems*. 2020.
- [113] Zardini, G., Lanzetti, N., Salazar, M., Censi, A., Frazzoli, E., Pavone, M., “On the Co-Design of AV-Enabled Mobility Systems”. In: *Proc. IEEE Int. Conf. on Intelligent Transportation Systems*. 2020.
- [114] Zardini, G., Lanzetti, N., Salazar, M., Censi, A., Frazzoli, E., Pavone, M., “Towards a Co-Design Framework for Future Mobility Systems”. In: *Annual Meeting of the Transportation Research Board*. 2020.
- [115] Abtahi, P., Landry, B., Yang, J. J., Pavone, M., Follmer, S., Landay, J. A., “Beyond The Force: Using Quadcopters to Appropriate Objects and the Environment for Haptics in Virtual Reality”. In: *ACM CHI Conf. on Human Factors in Computing Systems*. 2019.
- [116] Bonalli, R., Bylard, A., Cauligi, A., Lew, T., Pavone, M., “Trajectory Optimization on Manifolds: A Theoretically-Guaranteed Embedded Sequential Convex Programming Approach”. In: *Robotics: Science and Systems*. 2019.
- [117] Bonalli, R., Cauligi, A., Bylard, A., Pavone, M., “GuSTO: Guaranteed Sequential Trajectory Optimization via Sequential Convex Programming”. In: *Proc. IEEE Conf. on Robotics and Automation*. 2019.
- [118] Chinchali, S., Sharma, A., Harrison, J., Elhafsi, A., Kang, D., Pergament, E., Cidon, E., Katti, S., Pavone, M., “Network Offloading Policies for Cloud Robotics: a Learning-based Approach”. In: *Robotics: Science and Systems*. 2019.
- [119] Ivanovic, B., Harrison, J., Sharma, A., Chen, M., Pavone, M., “BaRC: Backward Reachability Curriculum for Robotic Reinforcement Learning”. In: *Proc. IEEE Conf. on Robotics and Automation*. 2019.
- [120] Ivanovic, B., Pavone, M., “The Trajectron: Probabilistic Multi-Agent Trajectory Modeling with Dynamic Spatiotemporal Graphs”. In: *IEEE Int. Conf. on Computer Vision*. 2019.
- [121] Lacotte, J., Ghavamzadeh, M., Chow, Y., Pavone, M., “Risk-Sensitive Generative Adversarial Imitation Learning”. In: *Int. Conf. on Artificial Intelligence and Statistics*. 2019.
- [122] Lacotte, J., Pilanci, M., Pavone, M., “High-Dimensional Optimization in Adaptive Random Subspaces”. In: *Conf. on Neural Information Processing Systems*. 2019.

- [123] Landry, B., Lorenzetti, J., Manchester, Z., Pavone, M., “Bilevel Optimization for Planning through Contact: A Semidirect Method”. In: *Int. Symp. on Robotics Research*. 2019.
- [124] Landry, B., Manchester, Z., Pavone, M., “A Differentiable Augmented Lagrangian Method for Bilevel Nonlinear Optimization”. In: *Robotics: Science and Systems*. 2019.
- [125] Leung, K., Aréchiga, N., Pavone, M., “Backpropagation for Parametric STL”. In: *IEEE Intelligent Vehicles Symposium: Workshop on Unsupervised Learning for Automated Driving*. 2019.
- [126] Lorenzetti, J., Landry, B., Singh, S., Pavone, M., “Reduced Order Model Predictive Control For Setpoint Tracking”. In: *European Control Conference*. 2019.
- [127] Salazar, M., Houshmand, A., Cassandras, C. G., Pavone, M., “Optimal Routing and Energy Management Strategies for Plug-in Hybrid Electric Vehicles”. In: *Proc. IEEE Int. Conf. on Intelligent Transportation Systems*. 2019.
- [128] Salazar, M., Tsao, M., Aguiar, I., Schiffer, M., Pavone, M., “A Congestion-aware Routing Scheme for Autonomous Mobility-on-Demand Systems”. In: *European Control Conference*. 2019.
- [129] Sharma, A., Harrison, J., Tsao, M., Pavone, M., “Robust and Adaptive Planning under Model Uncertainty”. In: *Int. Conf. on Automated Planning and Scheduling*. 2019.
- [130] Solovey, K., Salazar, M., Pavone, M., “Scalable and Congestion-aware Routing for Autonomous Mobility-on-Demand via Frank-Wolfe Optimization”. In: *Robotics: Science and Systems*. 2019.
- [131] Tsao, M., Milojevic, D., Ruch, C., Salazar, M., Frazzoli, E., Pavone, M., “Model Predictive Control of Ride-sharing Autonomous Mobility on Demand Systems”. In: *Proc. IEEE Conf. on Robotics and Automation*. 2019.
- [132] Zahroof, T., Bylard, A., Shageer, H., Pavone, M., “Perception-Constrained Robot Manipulator Planning for Satellite Servicing”. In: *IEEE Aerospace Conference*. 2019.
- [133] Zraggen, J., Tsao, M., Salazar, M., Schiffer, M., Pavone, M., “A Model Predictive Control Scheme for Intermodal Autonomous Mobility-on-Demand”. In: *Proc. IEEE Int. Conf. on Intelligent Transportation Systems*. 2019.
- [134] Bunge, R., Pavone, M., Kroo, I., “Minimal Altitude Loss Pullout Maneuvers”. In: *AIAA Conf. on Guidance, Navigation and Control*. 2018.
- [135] Chen, M., Tam, Q., Livingston, S. C., Pavone, M., “Signal Temporal Logic meets Hamilton-Jacobi Reachability: Connections and Applications”. In: *Workshop on Algorithmic Foundations of Robotics*. 2018.
- [136] Chinchali, S., Hu, P., Chu, T., Sharma, M., Bansal, M., Misra, R., Pavone, M., Katti, S., “Cellular Network Traffic Scheduling with Deep Reinforcement Learning”. In: *Proc. AAAI Conf. on Artificial Intelligence*. 2018.
- [137] Chiodini, S., Reid, R. G., Hockman, B., Nesnas, I. A. D., Debei, S., Pavone, M., “Robust Visual Localization for Hopping Rovers on Small Bodies”. In: *Proc. IEEE Conf. on Robotics and Automation*. 2018.
- [138] Harrison, J., Sharma, A., Pavone, M., “Meta-Learning Priors for Efficient Online Bayesian Regression”. In: *Workshop on Algorithmic Foundations of Robotics*. 2018.
- [139] Hockman, B., Pavone, M., “Traversability of Hopping Rovers on Small Solar System Bodies”. In: *Int. Symp. on Artificial Intelligence, Robotics and Automation in Space*. 2018.
- [140] Hockman, B., Reid, R. G., Nesnas, I. A. D., Pavone, M., “Gravimetric Localization on the Surface of Small Bodies”. In: *IEEE Aerospace Conference*. 2018.
- [141] Ichter, B., Harrison, J., Pavone, M., “Learning Sampling Distributions for Robot Motion Planning”. In: *Proc. IEEE Conf. on Robotics and Automation*. 2018.

- [142] Iglesias, R., Rossi, F., Wang, K., Hallac, D., Leskovec, J., Pavone, M., “Data-Driven Model Predictive Control of Autonomous Mobility-on-Demand Systems”. In: *Proc. IEEE Conf. on Robotics and Automation*. 2018.
- [143] Ivanovic, B., Schmerling, E., Leung, K., Pavone, M., “Generative Modeling of Multimodal Multi-Human Behavior”. In: *IEEE/RSJ Int. Conf. on Intelligent Robots & Systems*. 2018.
- [144] Janson, L., Hu, T., Pavone, M., “Safe Motion Planning in Unknown Environments: Optimality Benchmarks and Tractable Policies”. In: *Robotics: Science and Systems*. 2018.
- [145] Landry, B., Chen, M., Hemley, S., Pavone, M., “Reach-Avoid Problems via Sum-of-Squares Optimization and Dynamic Programming”. In: *IEEE/RSJ Int. Conf. on Intelligent Robots & Systems*. 2018.
- [146] Leung, K., Schmerling, E., Chen, M., Talbot, J., Gerdes, J. C., Pavone, M., “On Infusing Reachability-Based Safety Assurance within Probabilistic Planning Frameworks for Human-Robot Vehicle Interactions”. In: *Int. Symp. on Experimental Robotics*. 2018.
- [147] Lorenzetti, J., Chen, M., Landry, B., Pavone, M., “Reach-Avoid Games Via Mixed-Integer Second-Order Cone Programming”. In: *Proc. IEEE Conf. on Decision and Control*. 2018.
- [148] Rossi, F., Bandyopadhyay, S., Wolf, M., Pavone, M., “Review of Multi-Agent Algorithms for Collective Behavior: a Structural Taxonomy”. In: *IFAC Workshop on Networked & Autonomous Air & Space Systems*. 2018.
- [149] Rossi, F., Iglesias, R., Alizadeh, M., Pavone, M., “On the Interaction Between Autonomous Mobility-on-Demand Systems and the Power Network: Models and Coordination Algorithms”. In: *Robotics: Science and Systems*. Extended version available at <https://arxiv.org/abs/1709.04906>. 2018.
- [150] Salazar, M., Rossi, F., Schiffer, M., Onder, C. H., Pavone, M., “On the Interaction between Autonomous Mobility-on-Demand and the Public Transportation Systems”. In: *Proc. IEEE Int. Conf. on Intelligent Transportation Systems*. Extended Version, Available at <https://arxiv.org/abs/1804.11278>. 2018.
- [151] Schmerling, E., Leung, K., Vollprecht, W., Pavone, M., “Multimodal Probabilistic Model-Based Planning for Human-Robot Interaction”. In: *Proc. IEEE Conf. on Robotics and Automation*. 2018.
- [152] Singh, S., Chen, M., Herbert, S. L., Tomlin, C. J., Pavone, M., “Robust Tracking with Model Mismatch for Fast and Safe Planning: an SOS Optimization Approach”. In: *Workshop on Algorithmic Foundations of Robotics*. 2018.
- [153] Singh, S., Sindhvani, V., Slotine, J.-J. E., Pavone, M., “Learning Stabilizable Dynamical Systems via Control Contraction Metrics”. In: *Workshop on Algorithmic Foundations of Robotics*. 2018.
- [154] Tsao, M., Iglesias, R., Pavone, M., “Stochastic Model Predictive Control for Autonomous Mobility on Demand”. In: *Proc. IEEE Int. Conf. on Intelligent Transportation Systems*. Extended Version, Available at <https://arxiv.org/pdf/1804.11074>. 2018.
- [155] Wang, Z., Singh, S., Pavone, M., Schwager, M., “Cooperative Object Transport in 3D with Multiple Quadrotors using No Peer Communication”. In: *Proc. IEEE Conf. on Robotics and Automation*. 2018.
- [156] Bylard, A., MacPherson, R., Hockman, B., Cutkosky, M. R., Pavone, M., “Robust Capture and Deorbit of Rocket Body Debris Using Controllable Dry Adhesion”. In: *IEEE Aerospace Conference*. 2017.
- [157] Chinchali, S. P., Livingston, S. C., Pavone, M., “Multi-objective optimal control for proactive decision-making with temporal logic models”. In: *Int. Symp. on Robotics Research*. 2017.
- [158] Estrada, M. A., Jiang, H., Noll, B., Hawkes, E. W., Pavone, M., Cutkosky, M. R., “Force and Moment Constraints of a Curved Surface Gripper and Wrist for Assistive Free Flyers”. In: *Proc. IEEE Conf. on Robotics and Automation*. 2017.
- [159] Harrison, J., Garg, A., Ivanovic, B., Zhu, Y., Savarese, S., Li, F.-F., Pavone, M., “ADAPT: Zero-Shot Adaptive Policy Transfer for Stochastic Dynamical Systems”. In: *Int. Symp. on Robotics Research*. 2017.

- [160] Hockman, B., Pavone, M., "Stochastic Motion Planning for Hopping Rovers on Small Solar System Bodies". In: *Int. Symp. on Robotics Research*. 2017.
- [161] Ichter, B., Landry, B., Schmerling, E., Pavone, M., "Perception-Aware Motion Planning via Multiobjective Search on GPUs". In: *Int. Symp. on Robotics Research*. 2017.
- [162] Ichter, B., Schmerling, E., Agha-mohammadi, A., Pavone, M., "Real-Time Stochastic Kinodynamic Motion Planning via Multiobjective Search on GPUs". In: *Proc. IEEE Conf. on Robotics and Automation*. 2017.
- [163] Ichter, B., Schmerling, E., Pavone, M., "Group Marching Tree: Sampling-Based Approximately Optimal Motion Planning on GPUs". In: *IEEE Int. Conf. on Robotic Computing*. 2017.
- [164] Jorgensen, S., Chen, R., Milam, M., Pavone, M., "The Matroid Team Surviving Orienteers Problem: Constrained Routing of Heterogeneous Teams with Risky Traversal". In: *IEEE/RSJ Int. Conf. on Intelligent Robots & Systems*. 2017.
- [165] Jorgensen, S., Chen, R., Milam, M., Pavone, M., "The Risk-Sensitive Coverage Problem: Multi-Robot Routing Under Uncertainty with Service Level and Survival Constraints". In: *Proc. IEEE Conf. on Decision and Control*. 2017.
- [166] Jorgensen, S., Chen, R., Milam, M., Pavone, M., "The Team Surviving Orienteers Problem: Routing Robots in Uncertain Environments with Survival Constraints". In: *IEEE Int. Conf. on Robotic Computing*. 2017.
- [167] MacPherson, R., Hockman, B., Bylard, A., Estrada, M. A., Cutkosky, M. R., Pavone, M., "Trajectory Optimization for Dynamic Grasping in Space using Adhesive Grippers". In: *Field and Service Robotics*. 2017.
- [168] Majumdar, A., Pavone, M., "How Should a Robot Assess Risk? Towards an Axiomatic Theory of Risk in Robotics". In: *Int. Symp. on Robotics Research*. 2017.
- [169] Majumdar, A., Singh, S., Mandlekar, A., Pavone, M., "Risk-sensitive Inverse Reinforcement Learning via Coherent Risk Models". In: *Robotics: Science and Systems*. 2017.
- [170] Schmerling, E., Pavone, M., "Evaluating Trajectory Collision Probability through Adaptive Importance Sampling for Safe Motion Planning". In: *Robotics: Science and Systems*. 2017.
- [171] Singh, S., Majumdar, A., Slotine, J.-J. E., Pavone, M., "Robust Online Motion Planning via Contraction Theory and Convex Optimization". In: *Proc. IEEE Conf. on Robotics and Automation*. Extended Version, Available at <http://asl.stanford.edu/wp-content/papercite-data/pdf/Singh.Majumdar.Slotine.Pavone.ICRA17.pdf>. 2017.
- [172] Sushko, A., Tedjarati, A., Creus-Costa, J., Maldonado, S., Marshland, K., Pavone, M., "Low cost, high endurance, altitude-controlled latex balloon for near-space research (ValBal)". In: *IEEE Aerospace Conference*. 2017.
- [173] Allen, R., Pavone, M., "A Real-Time Framework for Kinodynamic Planning with Application to Quadrotor Obstacle Avoidance". In: *AIAA Conf. on Guidance, Navigation and Control*. 2016.
- [174] Carpin, S., Chow, Y., Pavone, M., "Risk Aversion in Finite Markov Decision Processes Using Total Cost Criteria and Average Value at Risk". In: *Proc. IEEE Conf. on Robotics and Automation*. 2016.
- [175] Chinchali, S. P., Livingston, S. C., Pavone, M., Burdick, J. W., "Simultaneous Model Identification and Task Satisfaction in the Presence of Temporal Logic Constraints". In: *Proc. IEEE Conf. on Robotics and Automation*. 2016.
- [176] Estrada, M. A., Hockman, B., Bylard, A., Hawkes, E. W., Cutkosky, M. R., Pavone, M., "Free-Flyer Acquisition of Spinning Objects with Gecko-Inspired Adhesives". In: *Proc. IEEE Conf. on Robotics and Automation*. 2016.

- [177] Flader, I. B., Ahn, C. H., Gerrard, D. D., Ng, E. J., Yang, Y., Hong, V. A., Pavone, M., Kenny, T. W., "Autonomous calibration of MEMS disk resonating gyroscope for improved sensor performance". In: *American Control Conference*. 2016.
- [178] Hockman, B., Reid, R. G., Nesnas, I. A. D., Pavone, M., "Experimental Methods for Mobility and Surface Operations of Microgravity Robots". In: *Int. Symp. on Experimental Robotics*. 2016.
- [179] Iglesias, R., Rossi, F., Zhang, R., Pavone, M., "A BCMP Network Approach to Modeling and Controlling Autonomous Mobility-on-Demand Systems". In: *Workshop on Algorithmic Foundations of Robotics*. 2016.
- [180] Starek, J. A., Schmerling, E., Maher, G. D., Barbee, B. W., Pavone, M., "Real-Time, Propellant-Optimized Spacecraft Motion Planning under Clohessy-Wiltshire-Hill Dynamics". In: *IEEE Aerospace Conference*. 2016.
- [181] Sunberg, Z., Kochenderfer, M., Pavone, M., "Optimized and Trusted Collision Avoidance for Unmanned Aerial Vehicles using Approximate Dynamic Programming". In: *Proc. IEEE Conf. on Robotics and Automation*. 2016.
- [182] Zhang, R., Rossi, F., Pavone, M., "Model Predictive Control of Autonomous Mobility-on-Demand Systems". In: *Proc. IEEE Conf. on Robotics and Automation*. 2016.
- [183] Zhang, R., Rossi, F., Pavone, M., "Routing Autonomous Vehicles in Congested Transportation Networks: Structural Properties and Coordination Algorithms". In: *Robotics: Science and Systems*. 2016.
- [184] Allen, R., Pavone, M., "Toward A Real-Time Framework for Solving the Kinodynamic Motion Planning Problem". In: *Proc. IEEE Conf. on Robotics and Automation*. 2015.
- [185] Chow, Y., Tamar, A., Mannor, S., Pavone, M., "Risk-Sensitive and Robust Decision-Making: a CVaR Optimization Approach". In: *Conf. on Neural Information Processing Systems*. 2015.
- [186] Hockman, B., Frick, A., Nesnas, I. A. D., Pavone, M., "Design, Control, and Experimentation of Internally-Actuated Rovers for the Exploration of Low-Gravity Planetary Bodies". In: *Field and Service Robotics*. 2015.
- [187] Janson, L., Ichter, B., Pavone, M., "Deterministic Sampling-Based Motion Planning: Optimality, Complexity, and Performance". In: *Int. Symp. on Robotics Research*. 2015.
- [188] Janson, L., Schmerling, E., Pavone, M., "Monte Carlo Motion Planning for Robot Trajectory Optimization Under Uncertainty". In: *Int. Symp. on Robotics Research*. 2015.
- [189] Schmerling, E., Janson, L., Pavone, M., "Optimal Sampling-Based Motion Planning under Differential Constraints: the Drift Case with Linear Affine Dynamics". In: *Proc. IEEE Conf. on Decision and Control*. 2015.
- [190] Schmerling, E., Janson, L., Pavone, M., "Optimal Sampling-Based Motion Planning under Differential Constraints: the Driftless Case". In: *Proc. IEEE Conf. on Robotics and Automation*. Extended version available at <http://arxiv.org/abs/1403.2483/>. 2015.
- [191] Singh, S., D'Amico, S., Pavone, M., "High-Fidelity Modeling and Control System Synthesis for a Drag-Free Microsatellite". In: *Int. Symp. on Space Flight Dynamics*. 2015.
- [192] Singh, S., Schmerling, E., Pavone, M., "Decentralized Algorithms for 3D Symmetric Formations in Robotic Networks - A Contraction Theory Approach". In: *Proc. IEEE Conf. on Robotics and Automation*. 2015.
- [193] Starek, J. A., Barbee, B. W., Pavone, M., "A Sampling-Based Approach to Spacecraft Autonomous Maneuvering with Safety Specifications". In: *AAS GN&C Conference*. 2015.
- [194] Starek, J. A., Gomez, J. V., Schmerling, E., Janson, L., Moreno, L., Pavone, M., "An Asymptotically-Optimal Sampling-Based Algorithm for Bi-directional Motion Planning". In: *IEEE/RSJ Int. Conf. on Intelligent Robots & Systems*. 2015.

- [195] Zhang, R., Pavone, M., "A Queueing Network Approach to the Analysis and Control of Mobility-on-Demand Systems". In: *American Control Conference*. 2015.
- [196] Zhang, R., Spieser, K., Frazzoli, E., Pavone, M., "Models, Algorithms and Evaluation for Autonomous Mobility-on-Demand Systems". In: *American Control Conference*. 2015.
- [197] Zhu, Z., Schmerling, E., Pavone, M., "A Convex Optimization Approach to Smooth Trajectories for Motion Planning with Car-Like Robots". In: *Proc. IEEE Conf. on Decision and Control*. 2015.
- [198] Allen, R., Clark, A., Starek, J. A., Pavone, M., "A Machine Learning Approach for Real-time Computation of Dynamical System Reachability Sets". In: *IEEE/RSJ Int. Conf. on Intelligent Robots & Systems*. 2014.
- [199] Carpin, S., Pavone, M., Sadler, B. M., "Rapid Multirobot Deployment with Time Constraints". In: *IEEE/RSJ Int. Conf. on Intelligent Robots & Systems*. 2014.
- [200] Chow, Y., Pavone, M., "A Framework for Time-Consistent, Risk-Averse Model Predictive Control: Theory and Algorithms". In: *American Control Conference*. 2014.
- [201] Koenig, A. W., Pavone, M., Castillo-Rogez, J. C., Nesnas, I. A. D., "A Dynamical Characterization of Internally-Actuated Microgravity Mobility Systems". In: *Proc. IEEE Conf. on Robotics and Automation*. 2014.
- [202] Reid, R. G., Roveda, L., Nesnas, I. A. D., Pavone, M., "Contact Dynamics of Internally-Actuated Platforms for the Exploration of Small Solar System Bodies". In: *Int. Symp. on Artificial Intelligence, Robotics and Automation in Space*. 2014.
- [203] Rossi, F., Pavone, M., "Distributed Consensus with Mixed Time/Communication Bandwidth Performance Metrics". In: *Allerton Conf. on Communications, Control and Computing*. 2014.
- [204] Rossi, F., Pavone, M., "On the Fundamental Limitations of Performance for Distributed Decision-Making in Robotic Networks". In: *Proc. IEEE Conf. on Decision and Control*. 2014.
- [205] Zhang, R., Pavone, M., "Control of Robotic Mobility-on-Demand Systems: a Queueing-Theoretical Perspective". In: *Robotics: Science and Systems*. Best Paper Award Finalist. 2014.
- [206] Allen, R., Pavone, M., McQuin, C., Nesnas, I., Castillo-Rogez, J. C., Nguyen, T., Hoffman, J. A., "Internally-Actuated Rovers for All-Access Surface Mobility: Theory and Experimentation". In: *Proc. IEEE Conf. on Robotics and Automation*. 2013.
- [207] Chow, Y., Pavone, M., "A Uniform-Grid Discretization Algorithm for Stochastic Optimal Control with Risk Constraints". In: *Proc. IEEE Conf. on Decision and Control*. 2013.
- [208] Chow, Y., Pavone, M., "Stochastic Optimal Control with Dynamic, Time-Consistent Risk Constraints". In: *American Control Conference*. 2013.
- [209] Janson, L., Pavone, M., "Fast Marching Trees: A Fast Marching Sampling-Based Method for Optimal Motion Planning in Many Dimensions". In: *Int. Symp. on Robotics Research*. 2013.
- [210] Pavone, M., Castillo, J., Nesnas, I., Hoffman, J. A., Strange, N., "Spacecraft/Rover Hybrids for the Exploration of Small Solar System Bodies". In: *IEEE Aerospace Conference*. 2013.
- [211] Rossi, F., Pavone, M., "Decentralized Decision-Making on Robotic Networks with Hybrid Performance Metrics". In: *Allerton Conf. on Communications, Control and Computing*. 2013.
- [212] Smith, S. L., Pavone, M., Schwager, M., Frazzoli, E., Rus, D., "Rebalancing the Rebalancers: Optimally Routing Vehicles and Drivers in Mobility-on-Demand Systems". In: *American Control Conference*. 2013.
- [213] Castillo, J., Pavone, M., Nesnas, I., Hoffman, J. A., "Expected Science Return of Spatially-Extended In-Situ Exploration at Small Solar System Bodies". In: *IEEE Aerospace Conference*. 2012.
- [214] Kuwata, Y., Pavone, M., Balaram, J., "A Risk-Constrained Multi-Stage Decision Making Approach to the Architectural Analysis of Mars Missions". In: *Proc. IEEE Conf. on Decision and Control*. 2012.

- [215] Stoica, A., Assad, C., Wolf, M., You, K. S., Pavone, M., Huntsberger, T., Iwashita, Y., "Using Arm and Hand Gestures to Command Robots during Stealth Operations". In: *Proc. of SPIE*. 2012.
- [216] Treleaven, K., Pavone, M., Frazzoli, E., "Cost Bounds for Pickup and Delivery Problems with Application to Large-Scale Transportation Systems". In: *American Control Conference*. 2012.
- [217] Treleaven, K., Pavone, M., Frazzoli, E., "Models and Efficient Algorithms for Pickup and Delivery Problems on Roadmaps". In: *Proc. IEEE Conf. on Decision and Control*. 2012.
- [218] Pavone, M., Smith, S. L., Frazzoli, E., Rus, D., "Load Balancing for Mobility-on-Demand Systems". In: *Robotics: Science and Systems*. 2011.
- [219] Treleaven, K., Pavone, M., Frazzoli, E., "An Asymptotically Optimal Algorithm for Pickup and Delivery Problems". In: *Proc. IEEE Conf. on Decision and Control*. 2011.
- [220] Pavone, M., Frazzoli, E., "Dynamic Vehicle Routing with Stochastic Time Constraints". In: *Proc. IEEE Conf. on Robotics and Automation*. 2010.
- [221] Pavone, M., Treleaven, K., Frazzoli, E., "Fundamental Performance Limits and Efficient Policies for Transportation-On-Demand Systems". In: *Proc. IEEE Conf. on Decision and Control*. 2010.
- [222] Pavone, M., Arsie, A., Frazzoli, E., Bullo, F., "Equitable Partitioning Policies for Robotic Networks". In: *Proc. IEEE Conf. on Robotics and Automation*. 2009.
- [223] Pavone, M., Smith, S. L., Bullo, F., Frazzoli, E., "Dynamic Multi-Vehicle Routing with Multiple Classes of Demands". In: *American Control Conference*. 2009.
- [224] Ramirez, J. L., Pavone, M., Frazzoli, E., Miller, D. W., "Distributed Control of Spacecraft Formation via Cyclic Pursuit: Theory and Experiments". In: *American Control Conference*. 2009.
- [225] Pavone, M., Frazzoli, E., Bullo, F., "Distributed Policies for Equitable Partitioning: Theory and Applications". In: *Proc. IEEE Conf. on Decision and Control*. 2008.
- [226] Smith, S. L., Pavone, M., Bullo, F., Frazzoli, E., "Dynamic Vehicle Routing with Heterogeneous Demands". In: *Proc. IEEE Conf. on Decision and Control*. 2008.
- [227] Pavone, M., Bisnik, N., Frazzoli, E., Isler, V., "Decentralized Vehicle Routing in a Stochastic and Dynamic Environment with Customer Impatience". In: *Int. Conf. on Robot Communication and Coordination*. 2007.
- [228] Pavone, M., Frazzoli, E., "Decentralized Policies for Geometric Pattern Formation". In: *American Control Conference*. 2007.
- [229] Pavone, M., Frazzoli, E., Bullo, F., "Decentralized Algorithms for Stochastic and Dynamic Vehicle Routing with General Demand Distribution". In: *Proc. IEEE Conf. on Decision and Control*. 2007.
- [230] Arena, P., Fortuna, L., Frasca, M., Patanè, L., Pavone, M., "Realization of a CNN-Driven Cockroach-Inspired Robot". In: *Int. Symp. on Circuits and Systems*. 2006.
- [231] Arena, P., Fortuna, L., Frasca, M., Patanè, L., Pavone, M., "Towards Autonomous Adaptive Behavior in a Bio-inspired CNN-controlled Robot". In: *Int. Symp. on Circuits and Systems*. 2006.
- [232] Arena, P., Fortuna, L., Frasca, M., Patanè, L., Pavone, M., "Climbing Obstacles via Bio-Inspired CNN-CPG and Adaptive Attitude Control". In: *Int. Symp. on Circuits and Systems*. 2005.
- [233] Pavone, M., Arena, P., Patanè, L., "An Innovative Mechanical and Control Architecture for a Biomimetic Hexapod for Planetary Exploration". In: *Int. Astronautical Congress*. Paper # IAC-05-A3.2.B.09. 2005.

Refereed Conference/Symposia Proceedings in Press/Accepted

- [234] Brown, R., Schmerling, E., Azizan, N., Pavone, M., "A Unified View of SDP-based Neural Network Verification through Completely Positive Programming". In: *Int. Conf. on Artificial Intelligence and Statistics*. 2022.

- [235] Chen, T. G., Miller, B., Winston, C., Schneider, S., Bylard, A., Pavone, M., Cutkosky, M. R., “Reach-Bot: A Small Robot with Exceptional Reach for Rough Terrain”. In: *Proc. IEEE Conf. on Robotics and Automation*. press. 2022.
- [236] Choudhury, S., Solovey, K., Kochenderfer, M. P., “Coordinated Multi-Agent Pathfinding for Drones and Trucks over Road Networks”. In: *Proc. Int. Conf. on Autonomous Agents and Multiagent Systems*. In Press. 2022.
- [237] Dyro, R., Schmerling, E., Arechiga, N., Pavone, M., “Second-Order Sensitivity Analysis for Bilevel Optimization”. In: *Int. Conf. on Artificial Intelligence and Statistics*. 2022.
- [238] Ivanovic, B., Lin, Y., Shrivastava, S., Chakravarty, P., Pavone, M., “Propagating State Uncertainty Through Trajectory Forecasting”. In: *Proc. IEEE Conf. on Robotics and Automation*. In Press. 2022.
- [239] Jalota, D., Solovey, K., Tsao, M., Zoepf, S., Pavone, M., “Balancing Fairness and Efficiency in Traffic Routing via Interpolated Traffic Assignment”. In: *Proc. Int. Conf. on Autonomous Agents and Multiagent Systems*. In Press. 2022.
- [240] Leung, K., Pavone, M., “Semi-Supervised Trajectory-Feedback Controller Synthesis with Signal Temporal Logic Specifications”. In: *American Control Conference*. In Press. 2022.
- [241] Lew, T., Janson, L., Bonalli, R., Pavone, M., “A Simple and Efficient Sampling-based Algorithm for General Reachability Analysis”. In: *Learning for Dynamics & Control Conference*. In Press. 2022.
- [242] Schneider, S., Bylard, A., Chen, T. G., Wang, P., Cutkosky, M. R., Pavone, M., “ReachBot: A Small Robot for Large Mobile Manipulation Tasks”. In: *IEEE Aerospace Conference*. In press. 2022.
- [243] Sinha, R., Harrison, J., Richards, S. M., Pavone, M., “Adaptive Robust Model Predictive Control with Matched and Unmatched Uncertainty”. In: *American Control Conference*. 2022.
- [244] Thorpe, A. J., Lew, T., Oishi, M. M. K., Pavone, M., “Data-Driven Chance Constrained Control using Kernel Distribution Embeddings”. In: *Learning for Dynamics & Control Conference*. In Press. 2022.
- [245] Salzmann, T., Pavone, M., Ryll, M., “Motron: Multimodal Probabilistic Human Motion Forecasting”. In: *IEEE Conf. on Computer Vision and Pattern Recognition*. Accepted. June 2022.
- [246] Dyro, R., Harrison, J., Sharma, A., Pavone, M., “Particle MPC for Uncertain and Learning-Based Control”. In: *IEEE/RSJ Int. Conf. on Intelligent Robots & Systems*. 2021.

Refereed Conference/Symposia Proceedings Submitted

- [247] Ivanovic, B., Lee, K.-H., Tokmakov, P., Wulfe, B., McAllister, R., Gaidon, A., Pavone, M., “Heterogeneous-Agent Trajectory Forecasting Incorporating Class Uncertainty”. In: Submitted. 2022.
- [248] Luo, R., Zhao, S., Kuck, J., Ivanovic, B., Savarese, S., Schmerling, E., Pavone, M., “Sample-Efficient Safety Assurances using Conformal Prediction”. In: Submitted. 2022.
- [249] Gammelli, D., K. Y., Harrison, J., F. R., F. P., Pavone, M., “Graph Meta-Reinforcement Learning for Transferable Autonomous Mobility-on-Demand”. In: *ACM Int. Conf. on Knowledge Discovery and Data Mining*. Submitted. Mar. 2022.
- [250] Salzmann, T., E. K., Pavone, M., D. S., Ryll, M., “Neural-MPC: Deep Learning Model Predictive Control for Quadrotors and Agile Robotic Platforms”. In: *IEEE Robotics and Automation Letters*. Submitted. Mar. 2022.
- [251] Lanzetti, N., Schiffer, M., Ostrovsky, M., Pavone, M., “On the Interplay Between Self-Driving Cars and Public Transportation”. In: *ACM Conference on Economics and Computation*. Submitted. 2021.
- [252] Willes, J., Harrison, J., Harakeh, A., Finn, C., Pavone, M., Waslander, S., “Open-Set Incremental Learning via Bayesian Prototypical Embeddings”. In: Submitted. 2021.

Book Chapters in Print

- [253] Schmerling, E., Pavone, M., “Kinodynamic Planning”. In: *Encyclopedia of Robotics*. First. Springer, 2019.
- [254] Starek, J. A., Acikmese, B., Nesnas, I. A. D., Pavone, M., “Spacecraft Autonomy Challenges for Next Generation Space Missions”. In: *Advances in Control System Technology for Aerospace Applications*. Springer, 2016. Chap. 1.
- [255] Pavone, M. “Autonomous Mobility-on-Demand Systems for Future Urban Mobility”. In: *Autonomes Fahren*. Springer, 2015.
- [256] Frazzoli, E., Pavone, M., “Multi-Vehicle Routing”. In: *Encyclopedia of Systems and Control*. Springer, 2014.
- [257] Spieser, K., Treleaven, K., Zhang, R., Frazzoli, E., Morton, D., Pavone, M., “Toward a Systematic Approach to the Design and Evaluation of Autonomous Mobility-on-Demand Systems: A Case Study in Singapore”. In: *Road Vehicle Automation*. Springer, 2014.
- [258] Enright, J. J., Frazzoli, E., Pavone, M., Savla, K., “UAV Routing and Coordination in Stochastic, Dynamic Environments”. In: *Handbook of Unmanned Aerial Vehicles*. Springer, 2013.