



Mac Schwager

Associate Professor of Aeronautics and Astronautics

Bio

ACADEMIC APPOINTMENTS

- Associate Professor, Aeronautics and Astronautics
- Member, Bio-X
- Member, Wu Tsai Human Performance Alliance

ADMINISTRATIVE APPOINTMENTS

- Associate Professor, Stanford University, (2021- present)
- Assistant Professor, Stanford University, (2015-2021)
- Assistant Professor, Boston University, (2012-2015)
- Postdoctoral Researcher, University of Pennsylvania, (2010-2012)
- Postdoctoral Researcher, MIT, (2009-2011)
- Automation Engineer, Applied Materials, Inc, (2000-2002)

HONORS AND AWARDS

- Best Paper Award in Multi-Robot Systems, International Conference on Robotics and Automation (ICRA) (2020)
- Toshio Fukuda Young Professional Award, International Conference on Intelligent Robots and Systems (IROS) (2019)
- Outstanding Professor Award in Aeronautics and Astronautics, AIAA Stanford Student Chapter (2018-2019)
- Best Paper in Robot Manipulation, International Conference on Robotics and Automation (ICRA) (2018)
- Google Faculty Research Award, Google (2018)
- Young Faculty Award (YFA), DARPA (2018)
- Best Paper Finalist, International Conference on Robotics and Automation (ICRA) (2016)
- King-Sun Fu Memorial Best Paper Award, IEEE Transactions on Robotics (2016)
- CAREER Award, NSF (2014)
- Best Paper Finalist, International Conference on Robotics and Automation (ICRA) (2011)
- Best Paper Award, Conference on the Simulation of Adaptive Behavior (SAB) (2008)
- Best Paper Finalist, International Conference on Robotics and Automation (ICRA) (2008)

PROFESSIONAL EDUCATION

- PhD, MIT , Mechanical Engineering (2009)
- MS, MIT , Mechanical Engineering (2005)

- BS, Stanford , Mechanical Engineering (2000)

LINKS

- Lab Website: <https://msl.stanford.edu/>
- Personal Website: <http://web.stanford.edu/~schwager/>

Teaching

COURSES

2023-24

- Advanced Feedback Control Design: AA 212 (Win)
- Principles of Robot Autonomy I: AA 274A, CS 237A, EE 260A (Aut)
- State Estimation and Filtering for Robotic Perception: AA 273 (Spr)

2022-23

- Advanced Feedback Control Design: AA 212 (Aut)
- Multi-Robot Control and Distributed Optimization: AA 277 (Win)
- State Estimation and Filtering for Robotic Perception: AA 273 (Spr)

2021-22

- Advanced Feedback Control Design: AA 212 (Aut)
- Multi-Robot Control and Distributed Optimization: AA 277 (Win)
- State Estimation and Filtering for Robotic Perception: AA 273 (Spr)

2020-21

- Advanced Feedback Control Design: AA 212 (Aut)
- Multi-Robot Control and Distributed Optimization: AA 277 (Win)
- State Estimation and Filtering for Robotic Perception: AA 273 (Spr)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Dylan Asmar, Victoria Dax, Robert Dyro, Fadhil Ginting, Matthew Hunter, Arec Jamgochian, Andrei Kanavalau, Liam Kruse, Bernard Lange, Joshua Ott, Jeff Park, Aliyah Smith, Emi Soroka, Trey Weber, Anil Yildiz, Molly Zhang

Postdoctoral Faculty Sponsor

Roya Fallah Firoozi

Orals Evaluator

Somrita Banerjee, Victoria Dax, Robert Dyro, Jeff Park, Patrick Washington, Molly Zhang

Doctoral Dissertation Advisor (AC)

Timothy Chen, Polo Contreras, Aaron Feldman, Jun En Low, Keiko Nagami, Jiankai Sun, Gadi Sznaier Camps, John Tucker, Joe Vincent, Patrick Washington, Javier Yu

Master's Program Advisor

Atharva Aalok, Vignesh Anand, Timothy Chen, Aviad Lengo, Thomas Liu, Irene Yeu, Javier Yu

Doctoral (Program)

Maximilian Adang

Publications

PUBLICATIONS

- **Online Path Repair: Adapting to Robot Failures in Multi-Robot Aerial Surveys** *IEEE ROBOTICS AND AUTOMATION LETTERS*
Clark, J., Shah, K., Schwager, M.
2024; 9 (3): 2319-2326
- **Distributed Optimization Methods for Multi-robot Systems: Part 1-A Tutorial** *IEEE ROBOTICS & AUTOMATION MAGAZINE*
Shorinwa, O., Halsted, T., Yu, J., Schwager, M.
2024
- **Distributed Optimization Methods for Multi-robot Systems: Part 2-A Survey** *IEEE ROBOTICS & AUTOMATION MAGAZINE*
Shorinwa, O., Halsted, T., Yu, J., Schwager, M.
2024
- **Fast Contact-Implicit Model Predictive Control** *IEEE TRANSACTIONS ON ROBOTICS*
Le Cleac'h, S., Howell, T. A., Yang, S., Lee, C., Zhang, J., Bishop, A., Schwager, M., Manchester, Z.
2024; 40: 1617-1629
- **Distributed Model Predictive Control via Separable Optimization in Multiagent Networks** *IEEE TRANSACTIONS ON AUTOMATIC CONTROL*
Shorinwa, O., Schwager, M.
2024; 69 (1): 230-245
- **Constrained Control of Large Graph-Based MDPs Under Measurement Uncertainty** *IEEE TRANSACTIONS ON AUTOMATIC CONTROL*
Haksar, R. N., Schwager, M.
2023; 68 (11): 6605-6620
- **NeRF-Loc: Transformer-Based Object Localization Within Neural Radiance Fields** *IEEE ROBOTICS AND AUTOMATION LETTERS*
Sun, J., Xu, Y., Ding, M., Yi, H., Wang, C., Wang, J., Zhang, L., Schwager, M.
2023; 8 (8): 5244-5250
- **Single-Level Differentiable Contact Simulation** *IEEE ROBOTICS AND AUTOMATION LETTERS*
Le Cleac'h, S., Schwager, M., Manchester, Z., Sindhvani, V., Florence, P., Singh, S.
2023; 8 (7): 4012-4019
- **Differentiable Physics Simulation of Dynamics-Augmented Neural Objects** *IEEE ROBOTICS AND AUTOMATION LETTERS*
Le Cleac'h, S., Yu, H., Guo, M., Howell, T., Gao, R., Wu, J., Manchester, Z., Schwager, M.
2023; 8 (5): 2780-2787
- **Intention Communication and Hypothesis Likelihood in Game-Theoretic Motion Planning** *IEEE ROBOTICS AND AUTOMATION LETTERS*
Chahine, M., Firoozi, R., Xiao, W., Schwager, M., Rus, D.
2023; 8 (3): 1223-1230
- **Maximum-Entropy Multi-Agent Dynamic Games: Forward and Inverse Solutions** *IEEE TRANSACTIONS ON ROBOTICS*
Mehr, N., Wang, M., Bhatt, M., Schwager, M.
2023
- **Distributed Multirobot Task Assignment via Consensus ADMM** *IEEE TRANSACTIONS ON ROBOTICS*
Shorinwa, O., Haksar, R. N., Washington, P., Schwager, M.
2023
- **Distributed Target Tracking in Multi-Agent Networks via Sequential Quadratic Alternating Direction Method of Multipliers**
Shorinwa, O., Schwager, M., IEEE
IEEE.2023: 341-348
- **CineTransfer: Controlling a Robot to Imitate Cinematographic Style from a Single Example**
Pueyo, P., Montijano, E., Murillo, A. C., Schwager, M., IEEE

IEEE.2023: 10044-10049

- **Local Non-Cooperative Games with Principled Player Selection for Scalable Motion Planning**
Chahine, M., Firoozi, R., Xiao, W., Schwager, M., Rus, D., IEEE
IEEE.2023: 880-887
- **GrAVITree: Graph-based Approximate Value Function In a Tree**
Washington, P. H., Fridovich-Keil, D., Schwager, M., IEEE
IEEE.2023: 4611-4618
- **CoCo: Online Mixed-Integer Control Via Supervised Learning** *IEEE ROBOTICS AND AUTOMATION LETTERS*
Cauligi, A., Culbertson, P., Schmerling, E., Schwager, M., Stellato, B., Pavone, M.
2022; 7 (2): 1447-1454
- **Vision-Only Robot Navigation in a Neural Radiance World** *IEEE ROBOTICS AND AUTOMATION LETTERS*
Adamkiewicz, M., Chen, T., Caccavale, A., Gardner, R., Culbertson, P., Bohg, J., Schwager, M.
2022; 7 (2): 4606-4613
- **DiNNO: Distributed Neural Network Optimization for Multi-Robot Collaborative Learning** *IEEE ROBOTICS AND AUTOMATION LETTERS*
Yu, J., Vincent, J. A., Schwager, M.
2022; 7 (2): 1896-1903
- **Fast Reciprocal Collision Avoidance Under Measurement Uncertainty**
Angeris, G., Shah, K., Schwager, M., Asfour, T., Yoshida, E., Park, J., Christensen, H., Khatib, O.
SPRINGER INTERNATIONAL PUBLISHING AG.2022: 191-207
- **FIG-OP: Exploring large-scale unknown environments on a fixed time budget** *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*
Peltzer, O., Bouman, A., Kim, S., Senanayake, R., Ott, J., Delecki, H., Sobue, M., Kochenderfer, M. J., Schwager, M., Burdick, J., Agha-mohammadi, A.
2022
- **Self-Supervised Traffic Advisors: Distributed, Multi-view Traffic Prediction for Smart Cities**
Sun, J., Kousik, S., Fridovich-Keil, D., Schwager, M., IEEE
IEEE.2022: 917-922
- **CineMPC: Controlling Camera Intrinsic and Extrinsic for Autonomous Cinematography**
Pueyo, P., Montijano, E., Murillo, A. C., Schwager, M., IEEE
IEEE.2022: 4058-4064
- **Game-Theoretic Planning for Autonomous Driving among Risk-Aware Human Drivers**
Chandra, R., Wang, M., Schwager, M., Manocha, D., IEEE
IEEE.2022: 2876-2883
- **Consensus-Based ADMM for Task Assignment in Multi-robot Teams**
Haksar, R. N., Shorinwa, O., Washington, P., Schwager, M., Asfour, T., Yoshida, E., Park, J., Christensen, H., Khatib, O.
SPRINGER INTERNATIONAL PUBLISHING AG.2022: 35-51
- **Decentralized Adaptive Control for Collaborative Manipulation of Rigid Bodies** *IEEE TRANSACTIONS ON ROBOTICS*
Culbertson, P., Slotine, J., Schwager, M.
2021; 37 (6): 1906-1920
- **ALGAMES: a fast augmented Lagrangian solver for constrained dynamic games** *AUTONOMOUS ROBOTS*
Le Cleac'h, S., Mac Schwager, Manchester, Z.
2021
- **SACBP: Belief space planning for continuous-time dynamical systems via stochastic sequential action control** *INTERNATIONAL JOURNAL OF ROBOTICS RESEARCH*
Nishimura, H., Schwager, M.
2021
- **Game-Theoretic Planning for Self-Driving Cars in Multivehicle Competitive Scenarios** *IEEE TRANSACTIONS ON ROBOTICS*
Wang, M., Wang, Z., Talbot, J., Gerdes, J., Schwager, M.

2021; 37 (4): 1313-1325

- **LUCIDGames: Online Unscented Inverse Dynamic Games for Adaptive Trajectory Prediction and Planning** *IEEE ROBOTICS AND AUTOMATION LETTERS*
Le Cleach, S., Schwager, M., Manchester, Z.
2021; 6 (3): 5485-5492
- **RAT iLQR: A Risk Auto-Tuning Controller to Optimally Account for Stochastic Model Mismatch** *IEEE ROBOTICS AND AUTOMATION LETTERS*
Nishimura, H., Mehr, N., Gaidon, A., Schwager, M.
2021; 6 (2): 763-70
- **HJB-RL: Initializing Reinforcement Learning with Optimal Control Policies Applied to Autonomous Drone Racing**
Nagami, K., Schwager, M., Shell, D. A., Toussaint, M., Hsieh, M. A.
RSS FOUNDATION-ROBOTICS SCIENCE & SYSTEMS FOUNDATION.2021
- **Reduced State Value Iteration for Multi-Drone Persistent Surveillance with Charging Constraints**
Washington, P. H., Schwager, M., IEEE
IEEE.2021: 6390-6397
- **MSL-RAPTOR: A 6DoF Relative Pose Tracker for Onboard Robotic Perception** *International Symposium on Experimental Robotics*
Ramtoula, B., Caccavale, A., Beltrame, G., Schwager, M.
2021: 520-532
- **Reachable polyhedral marching (rpm): A safety verification algorithm for robotic systems with deep neural network components** *2021 IEEE International Conference on Robotics and Automation (ICRA)*
Vincent, J. A., Schwager, M.
IEEE.2021: 9029-9035
- **TrajectoTree: Trajectory Optimization Meets Tree Search for Planning Multi-contact Dexterous Manipulation** *2021 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*
Chen, C., Culbertson, P., Lepert, M., Schwager, M., Bohg, J.
IEEE.2021: 8262-8268
- **Learning Large Graph-based MDPs with Historical Data** *IEEE Transactions on Control of Network Systems (Early Access)*
Haksar, R. N., Schwager, M.
2021
- **Distributed Contact-Implicit Trajectory Optimization for Collaborative Manipulation** *2021 International Symposium on Multi-Robot and Multi-Agent Systems (MRS)*
Shorinwa, O., Schwager, M.
IEEE.2021: 56-65
- **Multidrone aerial surveys of penguin colonies in Antarctica.** *Science robotics*
Shah, K., Ballard, G., Schmidt, A., Schwager, M.
2020; 5 (47)
- **Locomotion of Linear Actuator Robots Through Kinematic Planning and Nonlinear Optimization** *IEEE TRANSACTIONS ON ROBOTICS*
Usevitch, N. S., Hammond, Z. M., Schwager, M.
2020; 36 (5): 1404-21
- **A Real-Time Game Theoretic Planner for Autonomous Two-Player Drone Racing** *IEEE TRANSACTIONS ON ROBOTICS*
Spica, R., Cristofalo, E., Wang, Z., Montijano, E., Schwager, M.
2020; 36 (5): 1389-1403
- **Vision-Based Control for Fast 3-D Reconstruction With an Aerial Robot** *IEEE TRANSACTIONS ON CONTROL SYSTEMS TECHNOLOGY*
Cristofalo, E., Montijano, E., Schwager, M.
2020; 28 (4): 1189-1202
- **Robots and autonomous systems, SI DARS 2018** *ROBOTICS AND AUTONOMOUS SYSTEMS*
Correll, N., Schwager, M.
2020; 129

- **Scalable Cooperative Transport of Cable-Suspended Loads With UAVs Using Distributed Trajectory Optimization** *IEEE ROBOTICS AND AUTOMATION LETTERS*
Jackson, B. E., Howell, T. A., Shah, K., Schwager, M., Manchester, Z.
2020; 5 (2): 3368–74
- **Spatial Scheduling of Informative Meetings for Multi-Agent Persistent Coverage** *IEEE ROBOTICS AND AUTOMATION LETTERS*
Haksar, R. N., Trimpe, S., Schwager, M.
2020; 5 (2): 3027–34
- **An untethered isoperimetric soft robot** *SCIENCE ROBOTICS*
Usevitch, N. S., Hammond, Z. M., Schwager, M., Okamura, A. M., Hawkes, E. W., Follmer, S.
2020; 5 (40)
- **An untethered isoperimetric soft robot.** *Science robotics*
Usevitch, N. S., Hammond, Z. M., Schwager, M., Okamura, A. M., Hawkes, E. W., Follmer, S.
2020; 5 (40)
- **Multi-agent sensitivity enhanced iterative best response: A real-time game theoretic planner for drone racing in 3D environments** *ROBOTICS AND AUTONOMOUS SYSTEMS*
Wang, Z., Taubner, T., Schwager, M.
2020; 125
- **Scalable Distributed Optimization with Separable Variables in Multi-Agent Networks**
Shorinwa, O., Halsted, T., Schwager, M., IEEE
IEEE.2020: 3619–26
- **Distributed Multi-Target Tracking for Autonomous Vehicle Fleets**
Shorinwa, O., Yu, J., Halsted, T., Koufos, A., Mac Schwager, IEEE
IEEE.2020: 3495-3501
- **Enhancing Game-Theoretic Autonomous Car Racing Using Control Barrier Functions**
Notomista, G., Wang, M., Mac Schwager, Egerstedt, M., IEEE
IEEE.2020: 5393-5399
- **Optimal Sequential Task Assignment and Path Finding for Multi-Agent Robotic Assembly Planning**
Brown, K., Peltzer, O., Sehr, M. A., Schwager, M., Kochenderfer, M. J., IEEE
IEEE.2020: 441-447
- **Learning Mixed-Integer Convex Optimization Strategies for Robot Planning and Control**
Cauligi, A., Culbertson, P., Stellato, B., Bertsimas, D., Mac Schwager, Pavone, M., IEEE
IEEE.2020: 1698-1705
- **Scalable Collaborative Manipulation with Distributed Trajectory Planning**
Shorinwa, O., Schwager, M., IEEE
IEEE.2020: 9108-9115
- **Game-Theoretic Planning for Risk-Aware Interactive Agents**
Wang, M., Mehr, N., Gaidon, A., Mac Schwager, IEEE
IEEE.2020: 6998-7005
- **Risk-Sensitive Sequential Action Control with Multi-Modal Human Trajectory Forecasting for Safe Crowd-Robot Interaction**
Nishimura, H., Ivanovic, B., Gaidon, A., Pavone, M., Schwager, M., IEEE
IEEE.2020: 11205-11212
- **Distributed Motion Control for Multiple Connected Surface Vessels**
Wang, W., Wang, Z., Mateos, L., Huang, K., Schwager, M., Ratti, C., Rus, D., IEEE
IEEE.2020: 11658-11665
- **Directional Primitives for Uncertainty-Aware Motion Estimation in Urban Environments**
Senanayake, R., Toyungyernsub, M., Wang, M., Kochenderfer, M. J., Schwager, M., IEEE

IEEE.2020

- **CinemAirSim: A Camera-Realistic Robotics Simulator for Cinematographic Purposes**
Pueyo, P., Cristofalo, E., Montijano, E., Mac Schwager, IEEE
IEEE.2020: 1186-1191
- **GRAPE: Geometric Risk-Aware Pursuit-Evasion** *ROBOTICS AND AUTONOMOUS SYSTEMS*
Shah, K., Schwager, M.
2019; 121
- **Tracking a Markov Target in a Discrete Environment With Multiple Sensors** *IEEE TRANSACTIONS ON AUTOMATIC CONTROL*
Leahy, K., Schwager, M.
2019; 64 (6): 2396–2411
- **Distributed multi-robot formation control in dynamic environments** *AUTONOMOUS ROBOTS*
Alonso-Mora, J., Montijano, E., Nageli, T., Hilliges, O., Schwager, M., Rus, D.
2019; 43 (5): 1079–1100
- **Control in belief space with temporal logic specifications using vision-based localization** *INTERNATIONAL JOURNAL OF ROBOTICS RESEARCH*
Leahy, K., Cristofalo, E., Vasile, C., Jones, A., Montijano, E., Schwager, M., Belta, C.
2019; 38 (6): 702–22
- **Consensus-based Distributed 3D Pose Estimation with Noisy Relative Measurements**
Cristofalo, E., Montijano, E., Schwager, M., IEEE
IEEE.2019: 2646–53
- **Distributed Collision Avoidance of Multiple Robots with Probabilistic Buffered Voronoi Cells**
Wang, M., Schwager, M., Sabbatini, L.
IEEE.2019: 169-175
- **Cooperative Control of an Autonomous Floating Modular Structure Without Communication** **EXTENDED ABSTRACT**
Wang, W., Mateos, L., Wang, Z., Huang, K., Schwager, M., Ratti, C., Rus, D., Sabbatini, L.
IEEE.2019: 44-46
- **OuijaBots: Omnidirectional Robots for Cooperative Object Transport with Rotation Control Using No Communication**
Wang, Z., Yang, G., Su, X., Schwager, M., Gross, R., Kolling, A., Berman, S., Frazzoli, E., Martinoli, A., Matsuno, F., Gauci, M.
SPRINGER INTERNATIONAL PUBLISHING AG.2019: 117–31
- **Multi-Robot Assembly Sequencing via Discrete Optimization**
Culbertson, P., Bandyopadhyay, S., Schwager, M., IEEE
IEEE.2019: 6502–9
- **Trust But Verify: A Distributed Algorithm for Multi-Robot Wireframe Exploration and Mapping**
Caccavale, A., Mac Schwager, IEEE
IEEE.2019: 3294–3301
- **Game Theoretic Planning for Self-Driving Cars in Competitive Scenarios**
Wang, M., Wang, Z., Talbot, J., Gerdes, J., Schwager, M., Bicchi, A., KressGazit, H., Hutchinson, S.
MIT PRESS.2019
- **Controlling Heterogeneous Stochastic Growth Processes on Lattices with Limited Resources**
Haksar, R. N., Solowjow, F., Trimpe, S., Schwager, M., IEEE
IEEE.2019: 1315–22
- **Scalable Filtering of Large Graph-Coupled Hidden Markov Models**
Haksar, R. N., Lorenzetti, J., Schwager, M., IEEE
IEEE.2019: 1307–14
- **Translational and Rotational Invariance in Networked Dynamical Systems** *IEEE TRANSACTIONS ON CONTROL OF NETWORK SYSTEMS*
Vasile, C., Schwager, M., Belta, C.

2018; 5 (3): 822–32

- **Agile Coordination and Assistive Collision Avoidance for Quadrotor Swarms Using Virtual Structures** *IEEE TRANSACTIONS ON ROBOTICS*
Zhou, D., Wang, Z., Schwager, M.
2018; 34 (4): 916–23
- **Controlling Noncooperative Herds with Robotic Herders** *IEEE TRANSACTIONS ON ROBOTICS*
Pierson, A., Schwager, M.
2018; 34 (2): 517–25
- **Distributed Deep Reinforcement Learning for Fighting Forest Fires with a Network of Aerial Robots**
Haksar, R. N., Schwager, M., Kosecka, J., Maciejewski, A. A., Okamura, A., Bicchi, A., Stachniss, C., Song, D. Z., Lee, D. H., Chaumette, F., Ding, H., Li, J. S., Wen, et al
IEEE.2018: 1067–74
- **A Real-Time Game Theoretic Planner for Autonomous Two-Player Drone Racing**
Spica, R., Falanga, D., Cristofalo, E., Montijano, E., Scaramuzza, D., Schwager, M., KressGazit, H., Srinivasa, S., Howard, T., Atanasov, N.
MIT PRESS.2018
- **Controlling Large, Graph-based MDPs with Global Control Capacity Constraints: An Approximate LP Solution**
Haksar, R. N., Schwager, M., IEEE
IEEE.2018: 35–42
- **Active Motion-Based Communication for Robots with Monocular Vision**
Nishimura, H., Schwager, M., IEEE
IEEE COMPUTER SOC.2018: 2948–55
- **Decentralized Adaptive Control for Collaborative Manipulation**
Culbertson, P., Schwager, M., IEEE
IEEE COMPUTER SOC.2018: 278–85
- **Safe Distributed Lane Change Maneuvers for Multiple Autonomous Vehicles Using Buffered Input Cells**
Wang, M., Wang, Z., Paudel, S., Schwager, M., IEEE
IEEE COMPUTER SOC.2018: 4678–84
- **Cooperative Object Transport in 3D with Multiple Quadrotors using No Peer Communication**
Wang, Z., Singh, S., Pavone, M., Schwager, M., IEEE
IEEE COMPUTER SOC.2018: 1064–71
- **Wireframe Mapping for Resource-Constrained Robots**
Caccavale, A., Schwager, M., Kosecka, J., Maciejewski, A. A., Okamura, A., Bicchi, A., Stachniss, C., Song, D. Z., Lee, D. H., Chaumette, F., Ding, H., Li, J. S., Wen, et al
IEEE.2018: 8658–65
- **Robust Adaptive Coverage Control for Robotic Sensor Networks** *IEEE TRANSACTIONS ON CONTROL OF NETWORK SYSTEMS*
Schwager, M., Vitus, M. P., Powers, S., Rus, D., Tomlin, C. J.
2017; 4 (3): 462–476
- **Fast, On-line Collision Avoidance for Dynamic Vehicles Using Buffered Voronoi Cells** *IEEE ROBOTICS AND AUTOMATION LETTERS*
Zhou, D., Wang, Z., Bandyopadhyay, S., Schwager, M.
2017; 2 (2): 1047–54
- **Intercepting Rogue Robots: An Algorithm for Capturing Multiple Evaders With Multiple Pursuers** *IEEE ROBOTICS AND AUTOMATION LETTERS*
Pierson, A., Wang, Z., Schwager, M.
2017; 2 (2): 530–37
- **Adapting to sensing and actuation variations in multi-robot coverage** *INTERNATIONAL JOURNAL OF ROBOTICS RESEARCH*
Pierson, A., Figueiredo, L. C., Pimenta, L. C., Schwager, M.
2017; 36 (3): 337–354
- **Localization of a Ground Robot by Aerial Robots for GPS-Deprived Control with Temporal Logic Constraints**

Cristofalo, E., Leahy, K., Vasile, C., Montijano, E., Schwager, M., Belta, C., Kulic, D., Nakamura, Y., Khatib, O., Venture, G.
SPRINGER INTERNATIONAL PUBLISHING AG.2017: 525–37

- **Robust Adaptive Coverage for Robotic Sensor Networks**
Schwager, M., Vitus, M. P., Rus, D., Tomlin, C. J., Christensen, H. I., Khatib, O.
SPRINGER-VERLAG BERLIN.2017
- **Distributed Multi-Robot Localization from Acoustic Pulses Using Euclidean Distance Geometry**
Halsted, T., Schwager, M., Giordano, P. R.
IEEE.2017
- **Learning a Dynamical System Model for a Spatiotemporal Field Using a Mobile Sensing Robot**
Lan, X., Schwager, M., IEEE
IEEE.2017: 170–75
- **Force-Amplifying N-robot Transport System (Force-ANTS) for cooperative planar manipulation without communication** *INTERNATIONAL JOURNAL OF ROBOTICS RESEARCH*
Wang, Z., Schwager, M.
2016; 35 (13): 1564-1586
- **Rapidly Exploring Random Cycles: Persistent Estimation of Spatiotemporal Fields With Multiple Sensing Robots** *IEEE TRANSACTIONS ON ROBOTICS*
Lan, X., Schwager, M.
2016; 32 (5): 1230-1244
- **Correlated Orienteering Problem and its Application to Persistent Monitoring Tasks** *IEEE TRANSACTIONS ON ROBOTICS*
Yu, J., Schwager, M., Rus, D.
2016; 32 (5): 1106-1118
- **Flying Smartphones: When Portable Computing Sprouts Wings** *IEEE PERVASIVE COMPUTING*
Allen, R., Pavone, M., Schwager, M.
2016; 15 (3): 83-88
- **Vision-Based Distributed Formation Control Without an External Positioning System** *IEEE TRANSACTIONS ON ROBOTICS*
Montijano, E., Cristofalo, E., Zhou, D., Schwager, M., Sagues, C.
2016; 32 (2): 339-351
- **Kinematic Multi-Robot Manipulation with no Communication Using Force Feedback**
Wang, Z., Schwager, M., Okamura, A., Menciassi, A., Ude, A., Burschka, D., Lee, D., Arrichiello, F., Liu, H., Moon, H., Neira, J., Sycara, K., Yokoi, et al
IEEE.2016: 427–32
- **Distributed Multi-Robot Formation Control among Obstacles: A Geometric and Optimization Approach with Consensus**
Alonso-Mora, J., Montijano, E., Schwager, M., Rus, D., Okamura, A., Menciassi, A., Ude, A., Burschka, D., Lee, D., Arrichiello, F., Liu, H., Moon, H., Neira, et al
IEEE.2016: 5356-5363
- **Cooperative Multi-Quadrotor Pursuit of an Evader in an Environment with No-Fly Zones**
Pierson, A., Ataei, A., Paschalidis, I., Schwager, M., Okamura, A., Menciassi, A., Ude, A., Burschka, D., Lee, D., Arrichiello, F., Liu, H., Moon, H., Neira, et al
IEEE.2016: 320-326
- **Distributed Formation Control of Non-Holonomic Robots without a Global Reference Frame**
Montijano, E., Cristofalo, E., Schwager, M., Sagues, C., Okamura, A., Menciassi, A., Ude, A., Burschka, D., Lee, D., Arrichiello, F., Liu, H., Moon, H., Neira, et al
IEEE.2016: 5248-5254
- **Assistive Collision Avoidance for Quadrotor Swarm Teleoperation**
Zhou, D., Schwager, M., Okamura, A., Menciassi, A., Ude, A., Burschka, D., Lee, D., Arrichiello, F., Liu, H., Moon, H., Neira, J., Sycara, K., Yokoi, et al
IEEE.2016: 1249-1254
- **A Multi-Resolution Approach for Discovery and 3-D Modeling of Archaeological Sites Using Satellite Imagery and a UAV-borne Camera**
Ding, H., Cristofalo, E., Wang, J., Castanon, D., Montijano, E., Saligrama, V., Schwager, M., IEEE
IEEE.2016: 1359-1365

- **Adaptive Inter-Robot Trust for Robust Multi-Robot Sensor Coverage**
Pierson, A., Schwager, M., Inaba, M., Corke, P.
SPRINGER-VERLAG BERLIN.2016: 167-183
- **Q-Learning for Robust Satisfaction of Signal Temporal Logic Specifications**
Aksaray, D., Jones, A., Kong, Z., Schwager, M., Belta, C., IEEE
IEEE.2016: 6565-6570
- **Control in Belief Space with Temporal Logic Specifications**
Vasile, C., Leahy, K., Cristofalo, E., Jones, A., Schwager, M., Belta, C., IEEE
IEEE.2016: 7419-7424
- **Always Choose Second Best: Tracking a Moving Target on a Graph with a Noisy Binary Sensor**
Leahy, K., Schwager, M., IEEE
IEEE.2016: 1715-1721
- **Active Magnetic Anomaly Detection Using Multiple Micro Aerial Vehicles** *IEEE ROBOTICS AND AUTOMATION LETTERS*
Dames, P. M., Schwager, M., Rus, D., Kumar, V.
2016; 1 (1): 153–60
- **Rebalancing the Rebalancers: Optimally Routing Vehicles and Drivers in Mobility-on-Demand Systems** *American Control Conference (ACC)*
Smith, S. L., Pavone, M., Schwager, M., Frazzoli, E., Rus, D.
IEEE.2013: 2362–2367