Stanford

Mac Schwager

Associate Professor of Aeronautics and Astronautics and, by courtesy, of Computer Science

Bio

ACADEMIC APPOINTMENTS

- Associate Professor, Aeronautics and Astronautics
- Associate Professor (By courtesy), Computer Science
- 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

2025-26

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

2024-25

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

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)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Pol Francesch Huc, Matthew Hunter, Andrei Kanavalau, Daniel Neamati, Rohan Sinha, Aliyah Smith, Alexandros Tzikas, Isaac Ward, Asta Wu, Jianhao Zheng

Orals Chair

Joey Hejna, Haochen Shi, Stephen Tian, Albert Wu

Doctoral Dissertation Advisor (AC)

Maximilian Adang, Qianzhong Chen, Timothy Chen, Polo Contreras, Aaron Feldman, Suning Huang, Jiankai Sun, Gadi Sznaier Camps, John Tucker, Maggie Wang

Orals Evaluator

Keidai Iiyama, Rohan Sinha, Aliyah Smith, Alexandros Tzikas

Master's Program Advisor

Atharva Aalok, Timothy Chen, Florian Grader-Beck, Hojune Kim, Purushotham Mani, Sebastian Martínez, Lachlain McGranahan, Adam Yang

Doctoral Dissertation Co-Advisor (AC)

Colton Crosby

Doctoral (Program)

Hugo Buurmeijer, Jaden Clark

Publications

PUBLICATIONS

- **SketchPlan: Diffusion Based Drone Planning From Human Sketches** *IEEE ROBOTICS AND AUTOMATION LETTERS*
  Norelius, S., Feldman, A. O., Schwager, M.
  2026; 11 (4): 4377-4384
- **VISTA: Open-Vocabulary, Task-Relevant Robot Exploration With Online Semantic Gaussian Splatting** *IEEE ROBOTICS AND AUTOMATION LETTERS*
  Nagami, K., Chen, T., Yu, J., Shorinwa, O., Adang, M., Dougherty, C., Cristofalo, E., Schwager, M.
  2026; 11 (3): 3150-3157
- **GRAD-NAV++: Vision-Language Model Enabled Visual Drone <underline>Nav</underline>igation With <underline>G</underline>aussian <underline>Ra</underline>diance Fields and <underline>D</underline>ifferentiable Dynamics** *IEEE ROBOTICS AND AUTOMATION LETTERS*
  Chen, Q., Gao, N., Huang, S., Low, J., Chen, T., Sun, J., Schwager, M.
  2026; 11 (2): 1418-1425
- **Large-scale multi-robot assembly planning for autonomous manufacturing** *ROBOTICS AND AUTONOMOUS SYSTEMS*
  Brown, K., Asmar, D. M., Schwager, M., Kochenderfer, M. J.
  2025; 194
- **HAMMER: Heterogeneous, Multi-Robot Semantic Gaussian Splatting** *IEEE ROBOTICS AND AUTOMATION LETTERS*
  Yu, J., Chen, T., Schwager, M.
  2025; 10 (7): 7270-7277
- **Reachable Polyhedral Marching (RPM): An Exact Analysis Tool for Deep-Learned Control Systems** *IEEE TRANSACTIONS ON NEURAL NETWORKS AND LEARNING SYSTEMS*
  Vincent, J. A., Schwager, M.
  2025
- **SOUS VIDE: Cooking Visual Drone Navigation Policies in a Gaussian Splatting Vacuum** *IEEE ROBOTICS AND AUTOMATION LETTERS*
  Low, J., Adang, M., Yu, J., Nagami, K., Schwager, M.
  2025; 10 (5): 5122-5129
- **Splat-Nav: Safe Real-Time Robot Navigation in Gaussian Splatting Maps** *IEEE TRANSACTIONS ON ROBOTICS*
  Chen, T., Shorinwa, O., Bruno, J., Swann, A., Yu, J., Zeng, W., Nagami, K., Dames, P., Schwager, M.
  2025; 41: 2765-2784
- **SIREN: Semantic, Initialization-Free Registration of Multi-Robot Gaussian Splatting Maps**
  Shorinwa, O., Sun, J., Schwager, M., Majumdar, A.
  edited by Lim, J., Song, S., Park, H. W.
  JMLR-JOURNAL MACHINE LEARNING RESEARCH.2025: 3804-3827
- **ARCH: Hierarchical Hybrid Learning for Long-Horizon Contact-Rich Robotic Assembly**
  Sun, J., Curtis, A., You, Y., Xu, Y., Koehle, M., Chen, Q., Huang, S., Guibasi, L., Chitta, S., Schwager, M., Li, H.
  edited by Lim, J., Song, S., Park, H. W.
  JMLR-JOURNAL MACHINE LEARNING RESEARCH.2025: 2628-2642
- **Latent Theory of Mind: A Decentralized Diffusion Architecture for Cooperative Manipulation**
  He, C., Camps, G., Liu, X., Schwager, M., Sartoretti, G.
  edited by Lim, J., Song, S., Park, H. W.

JMLR-JOURNAL MACHINE LEARNING RESEARCH.2025: 392-405

- **ParticleFormer: A 3D Point Cloud World Model for Multi-Object, Multi-Material Robotic Manipulation**
  Huang, S., Chen, Q., Zhang, X., Sun, J., Schwager, M.
  edited by Lim, J., Song, S., Park, H. W.
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- **E2Map: Experience-and-Emotion Map for Self-Reflective Robot Navigation with Language Models**
  Kim, C., Kim, K., Oh, M., Baek, H., Lee, J., Jung, D., Woo, S., Woo, Y., Tucker, J., Firoozi, R., Seo, S., Schwager, M., Kim, et al
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  IEEE.2025: 12811-12817

- **A Control Barrier Function for Safe Navigation with Online Gaussian Splatting Maps**
  Chen, T., Swann, A., Yu, J., Shorinwa, O., Murai, R., Kennedy, M., Schwager, M.
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  IEEE.2025: 11758-11765

- **Safe, Out-of-Distribution-Adaptive MPC with Conformalized Neural Network Ensembles**
  Contreras, J., Shorinwa, O., Schwager, M.
  edited by Ozay, N., Balzano, L., Panagou, D., Abate, A.
  JMLR-JOURNAL MACHINE LEARNING RESEARCH.2025: 194-207

- **Gen-Swarms: Adapting Deep Generative Models to Swarms of Drones**
  Plou, C., Pueyo, P., Martinez-Cantin, R., Schwager, M., Murillo, A. C., Montijano, E.
  edited by DelBue, A., Canton, C., Pont-Tuset, J., Tommasi, T.
  SPRINGER INTERNATIONAL PUBLISHING AG.2025: 85-101

- **OA-MPC: Occlusion-Aware MPC for Guaranteed Safe Robot Navigation With Unseen Dynamic Obstacles** *IEEE TRANSACTIONS ON CONTROL SYSTEMS TECHNOLOGY*
  Firoozi, R., Mir, A., Camps, G., Schwager, M.
  2024

- **How Generalizable is My Behavior Cloning Policy? A Statistical Approach to Trustworthy Performance Evaluation** *IEEE ROBOTICS AND AUTOMATION LETTERS*
  Vincent, J. A., Nishimura, H., Itkina, M., Shah, P., Schwager, M., Kollar, T.
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- **Foundation models in robotics: Applications, challenges, and the future** *INTERNATIONAL JOURNAL OF ROBOTICS RESEARCH*
  Firoozi, R., Tucker, J., Tian, S., Majumdar, A., Sun, J., Liu, W., Zhu, Y., Song, S., Kapoor, A., Hausman, K., Ichter, B., Driess, D., Wu, et al
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- **State Estimation and Belief Space Planning Under Epistemic Uncertainty for Learning-Based Perception Systems** *IEEE ROBOTICS AND AUTOMATION LETTERS*
  Nagami, K., Schwager, M.
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- **Online Path Repair: Adapting to Robot Failures in Multi-Robot Aerial Surveys** *IEEE ROBOTICS AND AUTOMATION LETTERS*
  Clark, J., Shah, K., Schwager, M.
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- **Distributed Optimization Methods for Multi-robot Systems: Part 1-A Tutorial** *IEEE ROBOTICS & AUTOMATION MAGAZINE*
  Shorinwa, O., Halsted, T., Yu, J., Schwager, M.
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- **Distributed Optimization Methods for Multi-robot Systems: Part 2-A Survey** *IEEE ROBOTICS & AUTOMATION MAGAZINE*
  Shorinwa, O., Halsted, T., Yu, J., Schwager, M.
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- **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.

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- **Splat-MOVER: Multi-Stage, Open-Vocabulary Robotic Manipulation via Editable Gaussian Splatting**
  Shorinwa, O., Tucker, J., Smith, A., Swann, A., Chen, T., Firoozi, R., Kennedy, M., Schwager, M.
  edited by Kroemer, O., Agrawal, P., Burgard, W.
  JMLR-JOURNAL MACHINE LEARNING RESEARCH.2024
- **Get a Grip: Multi-Finger Grasp Evaluation at Scale Enables Robust Sim-to-Real Transfer**
  Lum, T., Li, A. H., Culbertson, P., Srinivasan, K., Ames, A. D., Schwager, M., Bohg, J.
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- **CLIPSwarm: Generating Drone Shows from Text Prompts with Vision-Language Models**
  Pueyo, P., Montijano, E., Murillo, A. C., Mac Schwager, IEEE
  IEEE.2024: 11917-11923
- **Distributed Conjugate Gradient Method via Conjugate Direction Tracking**
  Shorinwa, O., Schwager, M., IEEE
  IEEE.2024: 2066-2073
- **Touch-GS: Visual-Tactile Supervised 3D Gaussian Splatting**
  Swann, A., Strong, M., Do , W., Sznaier, G., Schwager, M., Kennedy, M.
  2024: 10511-10518
- **Guarantees on Robot System Performance Using Stochastic Simulation Rollouts** *IEEE TRANSACTIONS ON ROBOTICS*
  Vincent, J. A., Feldman, A. O., Schwager, M.
  2024; 40: 3984-4002
- **Distributed Quasi-Newton Method for Multi-Agent Optimization** *IEEE TRANSACTIONS ON SIGNAL PROCESSING*
  Shorinwa, O., Schwager, M.
  2024; 72: 3535-3546
- **CATNIPS: Collision Avoidance Through Neural Implicit Probabilistic Scenes** *IEEE TRANSACTIONS ON ROBOTICS*
  Chen, T., Culbertson, P., Schwager, M.
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- **CineMPC: A Fully Autonomous Drone Cinematography System Incorporating Zoom, Focus, Pose, and Scene Composition** *IEEE TRANSACTIONS ON ROBOTICS*
  Pueyo, P., Dendarieta, J., Montijano, E., Murillo, A., Schwager, M.
  2024; 40: 1740-1757
- **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.
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- **Single-Level Differentiable Contact Simulation** *IEEE ROBOTICS AND AUTOMATION LETTERS*
  Le Cleac'h, S., Schwager, M., Manchester, Z., Sindhwani, 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.
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- **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.
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- **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
- **Conformal Prediction for Uncertainty-Aware Planning with Diffusion Dynamics Model**
  Sun, J., Jiang, Y., Qiu, J., Nobel, P., Kochenderfer, M., Schwager, M.
  edited by Oh, A., Neumann, T., Globerson, A., Saenko, K., Hardt, M., Levine, S.
  NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2023
- **Connected Autonomous Vehicle Motion Planning with Video Predictions from Smart, Self-Supervised Infrastructure**
  Sun, J., Kousik, S., Fridovich-Keil, D., Schwager, M., IEEE
  IEEE.2023: 1721-1726
- **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
- **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
- **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
- **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
- **Fast Reciprocal Collision Avoidance Under Measurement Uncertainty**
  Angeris, G., Shah, K., Schwager, M.
  edited by 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 Intrinsics and Extrinsics 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.
  edited by 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 Cleac'h, 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.
  edited by 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.
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- **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.
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- **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
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- **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
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  Leahy, K., Cristofalo, E., Vasile, C., Jones, A., Montijano, E., Schwager, M., Belta, C.
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