Nikolay A. Atanasov

Contact Information

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Academic Appointments	
Assistant Professor Department of Electrical and Computer Engineering University of California San Diego, La Jolla, CA	Jul. 2017 - Present
Postdoctoral Researcher Department of Mechanical Engineering and Applied Mechanics University of Pennsylvania, Philadelphia, PA Advisors: Vijay Kumar and George J. Pappas	Sep. 2015 - Jun. 2017
Education	
Ph.D., Electrical and Systems Engineering University of Pennsylvania, Philadelphia, PA Thesis: <i>Active Information Acquisition with Mobile Robots</i> Advisors: George J. Pappas and Kostas Daniilidis Joseph and Rosaline Wolf Best Dissertation Award	Dec. 2015
M.S., Electrical Engineering University of Pennsylvania, Philadelphia, PA	Aug. 2012
B.S., Electrical Engineering Trinity College, Hartford, CT	May 2008

Research Interests

- Relevant fields: robotics, machine learning, control theory, optimization, computer vision
- simultaneous localization and mapping (SLAM); visual-inertial odometry (VIO); Bayesian inference; object pose, shape, and motion estimation; distributed Bayesian inference
- active perception; active learning; optimal control; reinforcement learning; distributed motion planning; multi-agent reinforcement learning; inverse reinforcement learning; system identification; safe control; active information acquisition using autonomous ground and aerial mobile robots

Teaching Experience

• Instructor, ECE276B: Planning and Learning in Robotics, UC San Diego	Spring 2024
• Instructor, ECE276A: Sensing and Estimation in Robotics, UC San Diego	Winter 2024
• Instructor, ECE171A: Linear Control System Theory, UC San Diego	Fall 2023
• Instructor, ECE276B: Planning and Learning in Robotics, UC San Diego	Spring 2023
• Instructor, ECE276A: Sensing and Estimation in Robotics, UC San Diego	Winter 2023
• Instructor, ECE171A: Linear Control System Theory, UC San Diego	Fall 2022
• Instructor, ECE276B: Planning and Learning in Robotics, UC San Diego	Spring 2022
• Instructor, ECE276A: Sensing and Estimation in Robotics, UC San Diego	Winter 2022

• Instructor, ECE171A: Linear Control System Theory, UC San Diego	Fall 2021
• Instructor, ECE276B: Planning and Learning in Robotics, UC San Diego	Spring 2021
• Instructor, ECE276A: Sensing and Estimation in Robotics, UC San Diego	Winter 2021
• Instructor, ECE276B: Planning and Learning in Robotics, UC San Diego	Spring 2020
• Instructor, ECE276A: Sensing and Estimation in Robotics, UC San Diego	Winter 2020
• Instructor, ECE276B: Planning and Learning in Robotics, UC San Diego	Spring 2019
• Instructor, ECE276A: Sensing and Estimation in Robotics, UC San Diego	Winter 2019
• Instructor, ECE276B: Planning and Learning in Robotics, UC San Diego	Winter 2018
• Instructor, ECE276A: Sensing and Estimation in Robotics, UC San Diego	Fall 2017
• Instructor, ESE650: Learning in Robotics, University of Pennsylvania	Spring 2017
• Guest Lecturer, ESE617: Nonlinear Systems and Control, University of Pennsylva	nia Fall 2015
• Guest Lecturer, ESE500: Linear Systems Theory, University of Pennsylvania	Fall 2011
• Teaching Assistant, ESE500: Linear Systems Theory, University of Pennsylvania	Fall 2010, Fall 2011
• Teaching Assistant, Calculus I, Trinity College, Hartford, CT	Fall 2006, Fall 2007
• Teaching Assistant, Calculus II, Trinity College, Hartford, CT Spring	g 2006, Spring 2007
• Teaching Assistant, Intro to Computer Science, Trinity College, Hartford, CT	Fall 2005

Honors & Awards

• IEEE RAS Early Academic Career Award in Robotics and Automation	
Awarded by the IEEE Robotics and Automation Society (RAS)	
 NSF Faculty Early Career Development (CAREER) Award 	2021
Awarded by the National Science Foundation (NSF)	
Best Poster Award, UC San Diego, Research Expo	2019
• Best Graduate Teacher Award, University of California, San Diego	2018
Awarded by the Department of Electrical and Computer Engineering	
Best Conference Paper Award	2017
Awarded at the IEEE International Conference on Robotics and Automation (ICRA)	
for the paper "Probabilistic Data Association for Semantic SLAM"	
• Joseph and Rosaline Wolf Best Ph.D. Dissertation Award, University of Pennsylvania	2015
Awarded by the School of Engineering and Applied Science	
Phi Beta Kappa Society	2008
 President's Fellow, Trinity College, Hartford, CT 	2007 - 2008
Awarded for outstanding work in the Engineering major	
• Thomas Holland Scholarship, Trinity College, Hartford, CT	2006 - 2008
Awarded for attaining the highest rank in the junior and senior classes	
Phi Gamma Delta Teaching Fellowship, Trinity College, Hartford, CT	2006, 2007
Awarded for aiding the Department of Mathematics in its instructional endeavors	

Journal Articles

- J27. Q. Feng and N. Atanasov, "TerrainMesh: Metric-Semantic Terrain Reconstruction from Aerial Images Using Joint 2D-3D Learning," *IEEE Transactions on Robotics (T-RO)*, vol. 40, pp. 1457–1475, 2024
- J26. P. Mestres, K. Long, N. Atanasov, and J. Cortés, "Feasibility Analysis and Regularity Characterization of Distributionally Robust Safe Stabilizing Controllers," *IEEE Control Systems Letters (L-CSS)*, vol. 8, pp. 91–96, 2024
- J25. T. Wang, V. Dhiman, and N. Atanasov, "Inverse Reinforcement Learning for Autonomous Navigation via Differentiable Semantic Mapping and Planning," *Autonomous Robots*, vol. 47, pp. 809–830, 2023
- J24. Z. Li and N. Atanasov, "Governor-parameterized barrier function for safe output tracking with locally sensed constraints," *Automatica*, vol. 152, p. 110996, 2023
- J23. J. A. Placed, J. Strader, H. Carrillo, N. Atanasov, V. Indelman, L. Carlone, and J. A. Castellanos, "A survey on active simultaneous localization and mapping: State of the art and new frontiers," *IEEE*

Transactions on Robotics (T-RO), vol. 39, no. 3, pp. 1686–1705, 2023

- J22. A. Asgharivaskasi and N. Atanasov, "Semantic octree mapping and shannon mutual information computation for robot exploration," *IEEE Transactions on Robotics (T-RO)*, vol. 39, no. 3, pp. 1910–1928, 2023
- J21. X. Cai, B. Schlotfeldt, K. Khosoussi, N. Atanasov, G. J. Pappas, and J. P. How, "Energy-aware, collisionfree information gathering for heterogeneous robot teams," *IEEE Transactions on Robotics (T-RO)*, vol. 39, no. 4, pp. 2585–2602, 2023
- J20. V. Dhiman, M. J. Khojasteh, M. Franceschetti, and N. Atanasov, "Control Barriers in Bayesian Learning of System Dynamics," *IEEE Transactions on Automatic Control (TAC)*, vol. 68, no. 1, pp. 214–229, 2023
- J19. Y. Yi, S. Koga, B. Gavrea, and N. Atanasov, "Control synthesis for stability and safety by differential complementarity problem," *IEEE Control Systems Letters* (*L-CSS*), vol. 7, pp. 895–900, 2023
- J18. Z. Li, T. Duong, and N. Atanasov, "Robust and Safe Autonomous Navigation for Systems with Learned SE(3) Hamiltonian Dynamics," *IEEE Open Journal of Control Systems (OJCSYS)*, vol. 1, pp. 164–179, 2022
- J17. M. Ostertag, N. Atanasov, and T. Rosing, "Trajectory Planning and Optimization for Minimizing Uncertainty in Persistent Monitoring Applications," *Springer Journal of Intelligent and Robotic Systems*, vol. 106, no. 2, 2022
- J16. T. Duong, M. Yip, and N. Atanasov, "Autonomous Navigation in Unknown Environments with Sparse Bayesian Kernel-based Occupancy Mapping," *IEEE Transactions on Robotics (T-RO)*, vol. 38, no. 6, pp. 3694–3712, 2022
- J15. K. Long, V. Dhiman, M. Leok, J. Cortés, and N. Atanasov, "Safe Control Synthesis With Uncertain Dynamics and Constraints," *IEEE Robotics and Automation Letters (RA-L)*, vol. 7, no. 3, pp. 7295–7302, 2022
- J14. T. Duong and N. Atanasov, "Adaptive Control of SE(3) Hamiltonian Dynamics with Learned Disturbance Features," *IEEE Control Systems Letters* (*L-CSS*), vol. 6, pp. 2773–2778, 2022
- J13. E. Zobeidi, A. Koppel, and N. Atanasov, "Dense Incremental Metric-Semantic Mapping for Multi-Agent Systems via Sparse Gaussian Process Regression," *IEEE Transactions on Robotics (T-RO)*, vol. 38, no. 5, pp. 3133–3153, 2022
- J12. P. Paritosh, N. Atanasov, and S. Martinez, "Distributed Bayesian Estimation of Continuous Variables over Time-varying Directed Networks," *IEEE Control Systems Letters (L-CSS)*, vol. 6, pp. 2545–2550, 2022
- J11. S. W. Chen, T. Wang, N. Atanasov, V. Kumar, and M. Morari, "Large Scale Model Predictive Control with Neural Networks and Primal Active Sets," *Automatica*, vol. 135, p. 109947, 2022
- J10. Y. Kantaros, B. Schlotfeldt, N. Atanasov, and G. J. Pappas, "Sampling-based Planning for Non-myopic Multi-robot Information Gathering," *Autonomous Robots*, vol. 45, pp. 1029–1046, 2021
- J9. K. Long, C. Qian, J. Cortés, and N. Atanasov, "Learning Barrier Functions with Memory for Robust Safe Navigation," *IEEE Robotics and Automation Letters* (*RA-L*), vol. 6, no. 3, pp. 4931–4938, 2021
- J8. R. Ivanov, N. Atanasov, M. Pajic, J. Weimer, G. J. Pappas, and I. Lee, "Continuous Estimation Using Context-Dependent Discrete Measurements," *IEEE Transactions on Automatic Control (TAC)*, vol. 64, no. 1, pp. 235–250, 2019
- J7. S. Liu, K. Mohta, N. Atanasov, and V. Kumar, "Search-based Motion Planning for Aggressive Flight in SE(3)," *IEEE Robotics and Automation Letters (RA-L)*, vol. 3, no. 3, pp. 2439–2446, 2018
- J6. B. Schlotfeldt, D. Thakur, N. Atanasov, V. Kumar, and G. J. Pappas, "Anytime Planning for Decentralized Multi-Robot Active Information Gathering," *IEEE Robotics and Automation Letters (RA-L)*, vol. 3, no. 2, pp. 1025–1032, 2018
- J5. K. Mohta, M. Watterson, Y. Mulgaonkar, S. Liu, C. Qu, A. Makineni, K. Saulnier, K. Sun, A. Zhu, J. Delmerico, K. Karydis, N. Atanasov, G. Loianno, D. Scaramuzza, K. Daniilidis, C. J. Taylor, and V. Kumar, "Fast, Autonomous Flight in GPS-Denied and Cluttered Environments," *Journal of Field Robotics (JFR)*, vol. 35, no. 1, pp. 101–120, 2018
- J4. N. Atanasov, M. Zhu, K. Daniilidis, and G. J. Pappas, "Localization from Semantic Observations via

the Matrix Permanent," The International Journal of Robotics Research (IJRR), vol. 35, pp. 73–99, 2015

- J3. N. Atanasov, J. Le Ny, and G. J. Pappas, "Distributed Algorithms for Stochastic Source Seeking with Mobile Robot Networks," ASME Journal of Dynamic Systems, Measurement, and Control (JDSMC), vol. 137, no. 3, pp. 031011–031011–9, 2015
- J2. N. Atanasov, B. Sankaran, J. Le Ny, G. J. Pappas, and K. Daniilidis, "Nonmyopic View Planning for Active Object Classification and Pose Estimation," *IEEE Transactions on Robotics (T-RO)*, vol. 30, no. 5, pp. 1078–1090, 2014
- J1. J. Ning and N. Atanasov, "Delineation of Systolic and Diastolic Heart Murmurs via Wavelet Transform and Autoregressive Modeling," *International Journal of Bioelectromagnetism*, vol. 12, no. 3, 2010

Conference Proceedings

- C71. K. Long, K. Tran, M. Leok, and N. Atanasov, "Safe Stabilizing Control for Polygonal Robots in Dynamic Elliptical Environments," in *American Control Conference (ACC)*, 2024
- C70. Z. Dai, A. Asgharivaskasi, T. Duong, S. Lin, M.-E. Tzes, G. J. Pappas, and N. Atanasov, "Optimal Scene Graph Planning with Large Language Model Guidance," in *IEEE International Conference on Robotics and Automation (ICRA)*, 2024
- C69. A. Altawaitan, J. Stanley, S. Ghosal, T. Duong, and N. Atanasov, "Hamiltonian Dynamics Learning from Point Cloud Observations for Nonholonomic Mobile Robot Control," in *IEEE International Conference on Robotics and Automation (ICRA)*, 2024
- C68. B. Huang, Y. Chen, T. Wang, Y. Qin, Y. Yang, N. Atanasov, and X. Wang, "Dynamic Handover: Throw and Catch with Bimanual Hands," in *Conference on Robot Learning (CoRL)*, 2023
- C67. E. Sebastián, T. Duong, N. Atanasov, E. Montijano, and C. Sagüés, "Learning to Identify Graphs from Node Trajectories in Multi-Robot Networks," in *IEEE International Symposium on Multi-Robot and Multi-Agent Systems (MRS)*, 2023
- C66. V. Duruisseaux, T. Duong, M. Leok, and N. Atanasov, "Lie Group Forced Variational Integrator Networks for Learning and Control of Robot Systems," in *Learning for Dynamics and Control (L4DC)*, 2023, pp. 731–744
- C65. K. Long, Y. Yi, J. Cortés, and N. Atanasov, "Distributionally Robust Lyapunov Function Search Under Uncertainty," in *Learning for Dynamics and Control (L4DC)*, 2023, pp. 864–877
- C64. P. Yang, S. Koga, A. Asgharivaskasi, and N. Atanasov, "Policy Learning for Active Target Tracking over Continuous SE(3) Trajectories," in *Learning for Dynamics and Control (L4DC)*, 2023, pp. 64–75
- C63. K. Long*, Y. Yi*, J. Cortés, and N. Atanasov, "Safe and Stable Control Synthesis for Uncertain System Models via Distributionally Robust Optimization," in *American Control Conference (ACC)*, 2023, pp. 4651–4658
- C62. E. Sebastian, T. Duong, N. Atanasov, E. Montijano, and C. Sagüés, "LEMURS: Learning Distributed Multi-Robot Interactions," in *IEEE International Conference on Robotics and Automation (ICRA)*, 2023, pp. 7713–7719
- C61. D. Larsson, A. Asgharivaskasi, J. Lim, N. Atanasov, and P. Tsiotras, "Information-theoretic Abstraction of Semantic Octree Models for Integrated Perception and Planning," in *IEEE International Conference on Robotics and Automation (ICRA)*, 2023, pp. 6937–6943
- C60. P. Yang, Y. Liu, S. Koga, A. Asgharivaskasi, and N. Atanasov, "Learning Continuous Control Policies for Information-Theoretic Active Perception," in *IEEE International Conference on Robotics and Automation (ICRA)*, 2023, pp. 2098–2104
- C59. A. Asgharivaskasi, S. Koga, and N. Atanasov, "Active Mapping via Gradient Ascent Optimization of Shannon Mutual Information over Continuous SE(3) Trajectories," in *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2022
- C58. B. Wang, J. Xie, and N. Atanasov, "DARL1N: Distributed multi-Agent Reinforcement Learning with One-hop Neighbors," in *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2022
- C57. T. Wang and N. Atanasov, "WFA-IRL: Inverse Reinforcement Learning of Autonomous Behaviors Encoded as Weighted Finite Automata," in *IEEE/RSJ International Conference on Intelligent Robots and*

Systems (IROS), 2022

- C56. Z. Li, T. Duong, and N. Atanasov, "Safe Autonomous Navigation for Systems with Learned SE(3) Hamiltonian Dynamics," in *Learning for Dynamics and Control (L4DC)*, 2022
- C55. J. Di, E. Zobeidi, A. Koppel, and N. Atanasov, "Distributed Gaussian Process Mapping for Robot Teams with Time-Varying Communication," in *American Control Conference (ACC)*, 2022
- C54. S. Koga, A. Asgharivaskasi, and N. Atanasov, "Active SLAM over Continuous Trajectory and Control: A Covariance-Feedback Approach," in *American Control Conference (ACC)*, 2022
- C53. M. Shan, Q. Feng, Y. Jau, and N. Atanasov, "ELLIPSDF: Joint Object Pose and Shape Optimization with a Bi-level Ellipsoid and Signed Distance Function Description," in *IEEE/CVF International Conference on Computer Vision (ICCV)*, 2021
- C52. T. Zhao, Q. Feng, S. Jadhav, and N. Atanasov, "CORSAIR: Convolutional Object Retrieval and Symmetry-AIded Registration," in *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2021
- C51. S. Koga, A. Asgharivaskasi, and N. Atanasov, "Active Exploration and Mapping via Iterative Covariance Regulation over Continuous SE(3) Trajectories," in *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2021
- C50. T. Duong and N. Atanasov, "Hamiltonian-based Neural ODE Networks on the SE(3) Manifold For Dynamics Learning and Control," in *Robotics: Science and Systems (RSS)*, 2021
- C49. A. Asgharivaskasi and N. Atanasov, "Active Bayesian Multi-class Mapping from Range and Semantic Segmentation Observations," in *IEEE International Conference on Robotics and Automation (ICRA)*, 2021
- C48. Q. Feng and N. Atanasov, "Mesh Reconstruction from Aerial Images for Outdoor Terrain Mapping Using Joint 2D-3D Learning," in *IEEE International Conference on Robotics and Automation (ICRA)*, 2021
- C47. X. Cai, B. Schlotfeldt, K. Khosoussi, N. Atanasov, G. J. Pappas, and J. P. How, "Non-Monotone Energy-Aware Information Gathering for Heterogeneous Robot Teams," in *IEEE International Conference on Robotics and Automation (ICRA)*, 2021
- C46. B. Wang, J. Xie, and N. Atanasov, "Coding for Distributed Multi-Agent Reinforcement Learning," in *IEEE International Conference on Robotics and Automation (ICRA)*, 2021
- C45. P. Paritosh, N. Atanasov, and S. Martinez, "Marginal Density Averaging for Distributed Node Localization from Local Edge Measurements," in *IEEE Conference on Decision and Control (CDC)*, 2020
- C44. E. Zobeidi, A. Koppel, and N. Atanasov, "Dense Incremental Metric-Semantic Mapping via Sparse Gaussian Process Regression," in *IEEE/RSJ International Conference on Intelligent Robots and Systems* (*IROS*), 2020
- C43. M. Shan, Q. Feng, and N. Atanasov, "OrcVIO: Object residual constrained Visual-Inertial Odometry," in *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2020
- C42. Q. Feng and N. Atanasov, "Fully Convolutional Geometric Features for Category-level Object Alignment," in *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2020
- C41. T. Wang, V. Dhiman, and N. Atanasov, "Learning Navigation Costs from Demonstrations with Semantic Observations," in *Learning for Dynamics and Control (L4DC)*, 2020
- C40. M. J. Khojasteh, V. Dhiman, M. Franceschetti, and N. Atanasov, "Probabilistic Safety Constraints for Learned High Relative-Degree System Dynamics," in *Learning for Dynamics and Control (L4DC)*, 2020
- C39. T. Duong, N. Das, M. Yip, and N. Atanasov, "Autonomous Navigation in Unknown Environments using Sparse Kernel-based Occupancy Mapping," in *IEEE International Conference on Robotics and Automation (ICRA)*, 2020
- C38. Z. Li, Ö. Arslan, and N. Atanasov, "Fast and Safe Path-Following Control using a State-Dependent Directional Metric," in *IEEE International Conference on Robotics and Automation (ICRA)*, 2020
- C37. T. Wang, V. Dhiman, and N. Atanasov, "Learning Navigation Costs from Demonstration in Partially Observable Environments," in *IEEE International Conference on Robotics and Automation (ICRA)*, 2020
- C36. K. Saulnier, N. Atanasov, G. Pappas, and V. Kumar, "Information Theoretic Active Exploration in Signed Distance Fields," in *IEEE International Conference on Robotics and Automation (ICRA)*, 2020
- C35. S. Kulgod, W. Chen, J. Huang, Y. Zhao, and N. Atanasov, "Temporal Logic Guided Locomotion Planning and Control in Cluttered Environments," in *American Control Conference (ACC)*, 2020
- C34. P. Paritosh, N. Atanasov, and S. Martinez, "Hypothesis Assignment and Partial Likelihood Averaging

for Cooperative Estimation," in IEEE Conference on Decision and Control (CDC), 2019

- C33. Q. Feng, Y. Meng, M. Shan, and N. Atanasov, "Localization and Mapping using Instance-specific Mesh Models," in *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2019
- C32. S. Guo and N. Atanasov, "Information Filter Occupancy Mapping using Decomposable Radial Kernels," in *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2019
- C31. B. Schlotfeldt, N. Atanasov, and G. J. Pappas, "Maximum Information Bounds for Planning Active Sensing Trajectories," in *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2019
- C30. Y. Kantaros, B. Schlotfeldt, N. Atanasov, and G. J. Pappas, "Asymptotically Optimal Planning for Non-Myopic Multi-Robot Information Gathering," in *Robotics: Science and Systems (RSS)*, 2019
- C29. P. Tecchio, N. Atanasov, S. Shahrampour, and G. J. Pappas, "N-Dimensional Distributed Network Localization With Noisy Range Measurements and Arbitrary Anchor Placement," in *American Control Conference (ACC)*, 2019
- C28. M. Ostertag, N. Atanasov, and T. Rosing, "Robust Velocity Control for Minimum Steady State Uncertainty in Persistent Monitoring Applications," in *American Control Conference (ACC)*, 2019
- C27. N. Atanasov, S. Bowman, K. Daniilidis, and G. Pappas, "A Unifying View of Geometry, Semantics, and Data Association in SLAM," in *International Joint Conference on Artificial Intelligence (IJCAI)*, 2018
- C26. A. Khan, C. Zhang, N. Atanasov, K. Karydis, V. Kumar, and D. D. Lee, "Memory Augmented Control Networks," in *International Conference on Learning Representations (ICLR)*, 2018
- C25. S. Chen, K. Saulnier, N. Atanasov, D. D. Lee, V. Kumar, G. J. Pappas, and M. Morari, "Approximating Explicit Model Predictive Control using Constrained Neural Networks," in *American Control Conference* (ACC), 2018
- C24. K. Sun, K. Saulnier, N. Atanasov, G. Pappas, and V. Kumar, "Dense 3-D Mapping with Spatial Correlation via Gaussian Filtering," in *American Control Conference (ACC)*, 2018
- C23. S. Liu, N. Atanasov, K. Mohta, and V. Kumar, "Search-based Motion Planning for Quadrotors using Linear Quadratic Minimum Time Control," in *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2017
- C22. M. Zhang, N. Atanasov, and K. Daniilidis, "Active End-Effector Pose Selection for Tactile Object Recognition through Monte Carlo Tree Search," in *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2017
- C21. A. Zhu, N. Atanasov, and K. Daniilidis, "Event-based Visual Inertial Odometry," in *IEEE Conference* on Computer Vision and Pattern Recognition (CVPR), 2017
- C20. A. Zhu, N. Atanasov, and K. Daniilidis, "Event-based Feature Tracking with Probabilistic Data Association," in *IEEE International Conference on Robotics and Automation (ICRA)*, 2017
- C19. S. Bowman, N. Atanasov, K. Daniilidis, and G. Pappas, "Probabilistic Data Association for Semantic SLAM," in *IEEE International Conference on Robotics and Automation (ICRA)*, 2017 (Best Paper Award)
- C18. S. Chen, N. Atanasov, A. Khan, K. Karydis, D. D. Lee, and V. Kumar, "Neural Network Memory Architectures for Autonomous Robot Navigation," in *Multi-disciplinary Conference on Reinforcement Learning and Decision Making (RLDM)*, 2017
- C17. V. Tzoumas, N. Atanasov, A. Jadbabaie, and G. Pappas, "Scheduling Nonlinear Sensors for Stochastic Process Estimation," in *American Control Conference (ACC)*, 2017
- C16. C. Di Franco, A. Prorok, N. Atanasov, B. Kempke, P. Dutta, V. Kumar, and G. Pappas, "Calibration-Free Network Localization using Non-Line-of-Sight Ultra-Wideband Measurements," in ACM/IEEE International Conference on Information Processing in Sensor Networks (IPSN), 2017
- C15. J. Fu, N. Atanasov, U. Topcu, and G. Pappas, "Optimal Temporal Logic Planning in Probabilistic Semantic Maps," in *IEEE International Conference on Robotics and Automation (ICRA)*, 2016
- C14. R. Ivanov, N. Atanasov, J. Weimer, M. Pajic, A. Simpao, M. Rehman, G. Pappas, and I. Lee, "Estimation of Blood Oxygen Content Using Context-Aware Filtering," in *ACM/IEEE International Conference on Cyber-Physical Systems (ICCPS)*, 2016
- C13. R. Ivanov, N. Atanasov, M. Pajic, G. Pappas, and I. Lee, "Robust Estimation Using Context-Aware Filtering," in *Allerton Conference on Communication, Control, and Computing*, 2015
- C12. N. Atanasov, J. Le Ny, K. Daniilidis, and G. Pappas, "Decentralized Active Information Acquisition:

Theory and Application to Multi-Robot SLAM," in *IEEE International Conference on Robotics and Automation (ICRA)*, 2015, pp. 4775–4782

- C11. N. Atanasov, R. Tron, V. Preciado, and G. Pappas, "Joint Estimation and Localization in Sensor Networks," in *IEEE Conference on Decision and Control (CDC)*, 2014, pp. 6875–6882
- C10. M. Zhu, N. Atanasov, G. Pappas, and K. Daniilidis, "Active Deformable Part Models Inference," in *European Conference on Computer Vision (ECCV)*, vol. 8695, 2014, pp. 281–296
- C9. N. Atanasov, M. Zhu, K. Daniilidis, and G. Pappas, "Semantic Localization via the Matrix Permanent," in *Robotics: Science and Systems (RSS)*, 2014
- C8. N. Atanasov, J. Le Ny, K. Daniilidis, and G. Pappas, "Information Acquisition with Sensing Robots: Algorithms and Error Bounds," in *IEEE International Conference on Robotics and Automation (ICRA)*, 2014, pp. 6447–6454
- C7. N. Atanasov*, B. Sankaran*, J. Le Ny, T. Koletschka, G. Pappas, and K. Daniilidis, "Hypothesis Testing Framework for Active Object Detection," in *IEEE International Conference on Robotics and Automation* (*ICRA*), 2013, pp. 4216–4222
- C6. N. Atanasov, J. Le Ny, N. Michael, and G. Pappas, "Stochastic Source Seeking in Complex Environments," in *IEEE International Conference on Robotics and Automation (ICRA)*, 2012, pp. 3013–3018
- C5. T. Ning, J. Ning, N. Atanasov, and K. Hsieh, "A Fast Heart Sounds Detection and Heart Murmur Classification Algorithm," in *IEEE International Conference on Signal Processing (ICSP)*, vol. 3, 2012
- C4. J. Ning, N. Atanasov, and T. Ning, "Quantitative Analysis of Heart Sounds and Systolic Heart Murmurs Using Wavelet Transform and AR Modeling," in *IEEE International Conference on Engineering in Medicine and Biology (EMBC)*, 2009
- C3. N. Atanasov and T. Ning, "Isolation of Systolic Heart Murmurs Using Wavelet Transform and Energy Index," in *IEEE Congress on Image and Signal Processing (CISP)*, 2008
- C2. N. Atanasov and T. Ning, "Quantitative Delineation of Heart Murmurs Using Features Derived from Autoregressive Modeling," in *IEEE Northeast Bioengineering Conference (NEBC)*, 2007
- C1. T. Ning, S. Bhandari, and N. Atanasov, "Restoration of Multi-channel Spectral Estimation Affected by Sampling Jitters," in *IEEE Northeast Bioengineering Conference (NEBC)*, 2007

Workshop Papers

- W12. S. Koga, M. Zhou, D. Panagou, and N. Atanasov, "Hide and Seek with Visibility Constraints using Control Barrier Functions," in *Workshop on Integrated Perception, Planning, and Control for Physically and Contextually-Aware Robot Autonomy at IROS*, 2023
- W11. A. Asgharivaskasi and N. Atanasov, "Distributed Optimization with Consensus Constraint for Multi-Robot Semantic Octree Mapping," in *Workshop on Collaborative Perception and Learning at ICRA*, 2023
- W10. T. Duong and N. Atanasov, "Physics-guided Learning-based Adaptive Control on the SE(3) Manifold," in Workshop on Physical Reasoning and Inductive Biases for the Real World at NeurIPS, 2021
- W9. T. Wang and N. Atanasov, "Learning Navigation Costs from Demonstration via Differentiable Planning," in *South California Robotics Symposium*, 2019
- W8. Q. Feng, Y. Meng, M. Shan, and N. Atanasov, "Localization and Mapping using Instance-specific Mesh Models," in *South California Robotics Symposium*, 2019
- W7. P. Paritosh, N. Atanasov, and S. Martinez, "Distributed Estimation Algorithms on Optimally Assigned Hypotheses," in *South California Robotics Symposium*, 2019
- W6. Q. Feng, Y. Meng, and N. Atanasov, "Dense Spatial Segmentation from Sparse Semantic Information," in Workshop on Learning and Inference in Robotics at RSS, 2018
- W5. B. Schlotfeldt, N. Atanasov, and G. J. Pappas, "Adversarial Information Acquisition," in *Workshop on Adversarial Robotics at RSS*, 2018
- W4. M. Shan and N. Atanasov, "A Spatiotemporal Model with Visual Attention for Video Classification," in *Workshop on Articulated Model Tracking at RSS*, 2017
- W3. R. Ivanov, N. Atanasov, M. Pajic, I. Lee, and G. Pappas, "Robust Localization Using Context-Aware Filtering," in *Workshop on Multiview Geometry in Robotics at RSS*, 2015

- W2. M. Lauri, N. Atanasov, G. Pappas, and R. Ritala, "Active Object Recognition via Monte Carlo Tree Search," in *Workshop on Beyond Geometric Constraints at ICRA*, 2015
- W1. M. Zhu, N. Atanasov, G. Pappas, and K. Daniilidis, "Active Deformable Part Models Inference," in *Workshop on Parts and Attributes at ECCV*, 2014

Patents

- 1. A. Zhu, N. Atanasov, K. Daniilidis, "Event-based Feature Tracking," US Patent # 11,138,742 B2; WIPO PCT WO 2018/152214 A1.
- 2. S. Bowman, N. Atanasov, K. Daniilidis, G. J. Pappas, "Probabilistic Data Association for Simultaneous Localization and Mapping," US Patent # 11,187,536 B2.

Seminars and Talks

- 1. "Active Bayesian Inference for Collaborative Robot Mapping," NSF NRI-FRR PI Meeting, Baltimore, MD, USA, April 2024.
- 2. "Elements of Generalizable Mobile Robot Autonomy," Semiautonomous Seminar, UC Berkeley, Berkeley, CA, USA, March 2024.
- 3. "Elements of Generalizable Mobile Robot Autonomy," USC Control Seminar, University of Southern California, Los Angeles, CA, USA, March 2024.
- 4. "Elements of Generalizable Mobile Robot Autonomy," MIT Robotics Seminar, Cambridge, MA, USA, March 2024.
- 5. "Learning Distributed Multi-Robot Interactions," TILOS Annual Review and NSF Site Visit, San Diego, CA, USA, July 2023.
- 6. "Distributed Optimization with Consensus Constraints for Multi-Robot Mapping," Workshop on Collaborative Perception and Learning, IEEE International Conference on Robotics and Automation (ICRA), London, UK, June 2023.
- 7. "Distributionally Robust Safety and Stability for Systems with Learned Models and Constraints," Workshop on Safe and Robust Learning for Reception-based Planning and Control, American Control Conference (ACC), San Diego, CA, USA, May 2023.
- 8. "Metric-Semantic Mapping and Dynamics Learning for Safe Autonomous Robot Navigation," Ming Hsieh Institute Cyber-Physical Systems Seminar Series, University of Southern California, Los Angeles, CA, USA, March 2023.
- 9. "Safe Stabilization and Tracking for Dynamical Systems under Model Uncertainty," Control Systems and Dynamics Seminar, UC San Diego, La Jolla, CA, USA, February 2023.
- 10. "Multi-Robot Metric-Semantic Mapping," ECE UCR Colloquium, UC Riverside, Riverside, CA, USA, November 2022.
- 11. "Multi-Robot Metric-Semantic Mapping," Illinois Robotics Seminar, University of Illinois Urbana-Champaign, September 2022.
- 12. "Signed Directional Distance Functions," Workshop on Robotic Perception and Mapping, IEEE International Conference on Robotics and Automation (ICRA), May 2022.
- 13. "Autonomous Robot Mapping, Navigation, and Exploration," ECE 297 Seminar Series, UC Los Angeles, Los Angeles, CA, April 2022.
- 14. "Challenges and Opportunities in Mobile Robot Autonomy," Faculty-to-Faculty (F2F) Seminar Series, UC San Diego, La Jolla, CA, April 2022.
- 15. "Object Pose and Shape Optimization for Simultaneous Localization and Mapping," Pixel Cafe Seminar, UC San Diego, La Jolla, CA, April 2021.
- 16. "Autonomous Control of Aerial Robots for Environmental Monitoring," IEEE RAS/CS/IAS Connecticut Chapter, March 2021.
- 17. "Active Information Acquisition using Collaborative Autonomous Robots," Workshop on Collaborative Intelligent Autonomous Actions against an Intelligent Adversary, Army Research Lab, December 2020.

- 18. "A unifying view of geometry, semantics, and data association in SLAM," Workshop on Emerging Learning and Algorithmic Methods for Data Association in Robotics, IEEE International Conference on Robotics and Automation (ICRA), May 2020.
- 19. "OrcVIO: Object residual constrained Visual-Inertial Odometry," Information Theory and Applications (ITA) Workshop, San Diego, CA, February 2020
- 20. "Autonomous Exploration and Mapping using Inertial, Geometric, and Semantic Information," Jet Propulsion Laboratory, Pasadena, CA, December. 2019
- 21. "Autonomous Exploration and Mapping using Inertial, Geometric, and Semantic Information," UCSD Robotics Graduate Student Association, , UC San Diego, La Jolla, CA, November 2019
- 22. "Autonomous Exploration and Mapping using Visual, Inertial, and Semantic Information," DCL Seminar Series, Georgia Institute of Technology, Atlanta, GA, April 2019.
- 23. "Autonomous Exploration and Mapping using Visual, Inertial, and Semantic Information," Lockheed Martin Robotics Seminar Series, University of Maryland, College Park, MD, March 2019.
- 24. "Semantic Mapping and Autonomous Navigation in Unknown Environments," Workshop on Intelligent Systems with Real-Time Learning, Knowledge Bases, and Information Retrieval, University of Texas, Austin, TX, January 2019.
- 25. "Active and Adversarial Information Acquisition," Workshop on "Adversarial Robotics," Robotics: Science and Systems (RSS) Conference, Pittsburgh, PA, June 2018.
- 26. "Artificial Intelligence: A Path Forward," panel at the West Conference sponsored by AFCEA International and the U.S. Naval Institute, San Diego, CA, February 2018.
- 27. "Semantic Localization and Mapping," Panel on Advanced Robotic Imaging, The Indus Entrepreneurs, San Diego, CA, October 2017.
- 28. "Semantic Mapping and Mission Planning in Robotics," Machine Learning and Formal Methods Seminar, Dagstuhl, Germany, August 2017.
- 29. "Using Semantic Information in Robot Localization, Mapping, and Mission Planning," ATA Engineering, San Diego, CA, August 2017.
- 30. "Metric-Semantic SLAM with Probabilistic Data Association," Artificial Intelligence Think Tank, Gordon Engineering Leadership Center, UC San Diego, La Jolla, CA, June 2017.
- 31. "Acquiring Metric and Semantic Information Using Autonomous Robots" at UC San Diego, Georgia Tech, MIT, University of Minnesota, UT Austin, Duke, Princeton, NYU, Stanford, ETH Zurich, BU, CMU, UC Berkeley, February-April 2016.
- 32. "Active Information Acquisition with Mobile Robots" at UC Berkeley, UC Los Angeles, University of Southern California, and California Institute of Technology, February 2015.
- 33. "Distributed Information Acquisition with Mobile Sensors," Workshop on Humans and Sensing in Cyber-Physical Systems, Robotics: Science and Systems (RSS) Conference, Berkeley, CA, July 2014.

Outreach Activities

- 1. Mentored undergraduate and K12 students through UCSD outreach programs:
 - ECE Spring/Summer Research Internship Program (SRIP): 2 students in 2018; 4 students in 2019; 5 students in 2020; 3 students in 2021; 6 students in 2022; 3 students in 2023; 3 students in 2024
 - Summer Training Academy for Research Success (STARS): 1 student in 2019; 1 student in 2022
 - International Summer Research Program (ISRP): 1 student in 2017; 1 student in 2018; 1 student in 2019; 2 students in 2023
 - ENLACE Summer Research Program: 1 student in 2019; 4 students in 2021; 2 students in 2022; 1 student in 2023
 - Regents Scholars Research Initiative (RSRI): 1 student in 2019; 2 students in 2020; 2 students in 2023
 - Guided Engineering Apprenticeship in Research (GEAR): 1 student in 2020-2021; 2 students in 2021-2022; 2 students in 2022-2023; 1 student 2023-2024

- 2. "ECE Department at UCSD and Mobile Robot Autonomy," Presentation at ECE Day Kickoff Event, UC San Diego, La Jolla, CA, April 2023.
- 3. Contextual Robotics Institute Lab Tour, ECE Day 2023, UC San Diego, La Jolla, CA, April 2023.
- 4. Contextual Robotics Institute Lab Tour, First Tech Challenge high-school students, UC San Diego, La Jolla, CA, March 2023.
- 5. Contextual Robotics Institute Lab Tour, Sweetwater Highschool students, UC San Diego, La Jolla, CA, February 2023.
- 6. Co-organized 4 robotics tutorials on mapping, planning, optimization, learning (https://github.com/ExistentialRobotics/robotics-workshop) at HKN and IEEE Chapters, UC San Diego and San Diego State University, Spring 2021
- 7. "Autonomous Control of Aerial Robots for Environmental Monitoring," IEEE Technical Seminar for undergraduate students, The College of New Jersey (TCNJ), March 2021.
- 8. "Terrain Mapping and Safe Control of Aerial Robots for Wildfire Detection," Guest Lecture at HKN and IEEE, UCSD and SDSU Chapters, October 2020.
- 9. "Introduction to Robot Localization and Mapping," lecture for the UCSD Splash High-School Program, UC San Diego, La Jolla, CA, April 2019.
- 10. "Introduction to Robot Localization and Mapping," lectures for the UCSD Splash High-School Program, UC San Diego, La Jolla, CA, May 2018.
- 11. "Introduction to Robotics," lecture for the California State Summer School for Mathematics and Science (COSMOS) Program, July 2017.

Research Group

Ph.D. Students:

- Thai Duong, ECE, UCSD
- Arash Asgharivaskasi, ECE, UCSD
- Kehan Long, MATH, UCSD, co-advised with Prof. Melvin Leok (MATH, UCSD)
- Abdullah Altawaitan, ECE, UCSD
- Zhirui Dai, ECE, UCSD
- Hanwen Cao, ECE, UCSD
- Yinzhuang Yi, ECE, UCSD, co-advised with Prof. Jorge Cortés (MAE, UCSD)
- Nikola Raicevic, ECE, UCSD

M.S. Students:

- Fritz Girke, Technical University of Munich
- Tianji Tang, ECE, UCSD (SRIP 2024)
- Jason Stanley, ECE, UCSD (SRIP 2024)
- Dwait Bhatt, ECE, UCSD (SRIP 2023)
- Mustafa Shaikh, ECE, UCSD (SRIP 2023)
- Minnan Zhou, ECE, UCSD
- Vatsalya Chaubey, ECE, UCSD
- Sumangala Patki, ECE, UCSD
- Awies Mohammad Mulla, ECE, UCSD
- Surya Thoguluva Kumaran Babu, ECE, UCSD
- Mahesh Rameshkumar, MAE, UCSD
- Surya Lakshmi Subba Rao Pilla, ECE, UCSD
- Sharath Matada, MAE, UCSD
- James Sorge, ECE, UCSD
- Niyas Attasseri, ECE, UCSD
- Ritika Kumar, ECE, UCSD
- Saketh Madhuvarasu, ECE, UCSD

- Animesh Singhal, ECE, UCSD
- Vrutik Shah, ECE, UCSD
- Aram Chemishkian, ECE, UCSD

Undergraduate and K12 Students:

- Charlotte Dong, ECE, UCSD (SRIP 2024)
- Girish Krishnan, ECE, UCSD (GEAR)
- Zeyu (Jeffrey) Chen, ECE, UCSD
- Eric Zheng, ECE, UCSD (GEAR)
- Madhoolika Chodavarapu, ECE, UCSD
- Risab Sankar, ECE, UCSD
- Chengkai Yao, ECE, UCSD
- Aniket Bhosale, ECE, UCSD
- Minghan Wu, ECE, UCSD

Postdoctoral Researcher Alumni:

- Shumon Koga, Staff Engineer, Honda R&D, Tokyo, Japan, 2023
- Vikas Dhiman, Assistant Professor, University of Maine, 2021

Ph.D. Student Alumni:

- Tianyu Wang, ECE, UCSD, 2024
- Parth Paritosh, MAE, UCSD, co-advised with Dr. Sonia Martinez, 2023
- Qiaojun Feng, ECE, UCSD, 2023
- Ehsan Zobeidi, ECE, UCSD, 2023
- Zhichao Li, ECE, UCSD, 2023
- Baoqian Wang, ECE, UCSD and SDSU, co-advised with Dr. Junfei Xie, 2023

Ph.D. Student Visitors:

- Lucía Güitta López, Comillas Pontifical University, Spring 2024
- Eduardo Sebastián Rodríguez, University of Zaragoza, Spring 2022

M.S. Thesis Student Alumni:

- Alexander Paskal, ECE, UCSD, 2023
- Hojoon Shin, MAE, UCSD, 2023
- Sriram Shreedharan, ECE, UCSD, 2023
- Sutej Kulgod, ECE, UCSD, 2020 (SRIP)
- Alexander Khoury, ECE, UCSD, 2019
- Ibrahim Akbar, ECE, UCSD, 2019 (SRIP)
- Yue Meng, ECE, UCSD, 2019

M.S. Student Alumni:

- Mehul Arora, CSE, UCSD, 2024
- Prithwiraj Paul, ECE, UCSD, 2024
- Saqib Azim, ECE, UCSD, 2023
- Shubham Kumar, ECE, UCSD, 2023
- Sambaran Ghosal, ECE, UCSD, 2023
- Venkata Naga Kishore Nukala, ECE, UCSD, 2023
- Shrey Kansal, MAE, UCSD, 2023
- Rishabh Bhattacharya, ECE, UCSD, 2023
- Peiran Liu, ECE, UCSD, 2023
- Sumanth Cherupally, ECE, UCSD, 2023

- Shusen Lin, ECE, UCSD, 2023
- Rachit Chhabra, MAE, UCSD, 2023
- Abhinav Gupta, CSE, UCSD, 2023
- Aiwei Yin, ECE, UCSD, 2023
- Kunaal Malodhakar, ECE, UCSD, 2023 (SRIP)
- Zhexu Li, CSE, UCSD, 2022 (SRIP)
- Siddhant Saoji, ECE, UCSD, 2022 (SRIP)
- Yaobang Deng, CSE, UCSD, 2022
- Yen-Ting Huang, ECE, UCSD, 2022
- Nikhil Karnwal, ECE, UCSD, 2022
- Allen Zeng, ECE, UCSD, 2022
- Yifan Wu, ECE, UCSD, 2022
- Mo Shan, ECE, UCSD, 2021
- Yuhan Liu, CSE, 2021
- Shiladitya Biswas, ECE, UCSD, 2021
- Tianyu Zhao, ECE, UCSD, 2021
- Mohammed Alyaseen, ECE, UCSD, 2021
- Jinzhao Li, ECE, UCSD, 2020 (SRIP)
- Zihan Wang, UCSD, Summer 2020 (SRIP)
- Sai Jadhav, ECE, UCSD, 2020
- Kun Chen, ECE, UCSD, 2020 (SRIP)
- Harshini Rajachander, ECE, UCSD, 2019
- Siwei Guo, ECE, UCSD, 2018
- Jialiang Liu, ECE, UCSD, Summer 2018 (SRIP)
- Youxing Wang, ECE, UCSD, 2018

Undergraduate and K12 Student Alumni:

- Muhammad Fadli Alim Arsani, ECE, UCSD, 2023
- Ali Hussain, ECE, UCSD, 2022-2023 (GEAR)
- Shuyan Tan, ECE, UCSD, Fall 2023
- Naythan Chan, MiraCosta College, Summer 2023
- Leo Sun, Del Norte High School, Summer 2023
- Kuang Ting (Tim) Tu, National Tsing Hua University, Summer 2023 (ISRP)
- Xuezhou Xu, National University of Singapore, Summer 2023 (ISRP)
- Aditi Krishnakumar, CogSci, UCSD, 2023
- Anthony Hirales Ahuatzin, CETYS-Tijuana, Mexico, Summer 2021, Summer 2023 (ENLACE)
- Rohan Bosworth, Poway High School, 2021-2023
- Yuchen Zhang, ECE, UCSD, 2023
- Behrad Rabiei, ECE, UCSD, 2021-2023
- Jim Solomon, UC Los Angeles, Summer 2022 (STARS)
- Kevin Alejandro Buzani González, Instituto Tecnológico de Hermosillo, Summer 2022 (ENLACE)
- Sergio Reojas Cabrera, Summer 2022 (ENLACE)
- Anthony Tseng, ECE, UCSD, 2022 (SRIP)
- Gao Zhu, CSE, UCSD, 2022
- Arsalan Sepahpour, ECE, UCSD, 2022
- Jiawen Yu, ECE, UCSD, 2022 (SRIP)
- Adin Ackerman, ECE, UCSD, Summer 2022 (SRIP)
- Minh Pham, ECE, UCSD, 2020-2022
- Peter Stratton, CSE, UCSD, 2019-2022
- Noe Jimenez, ECE, UCSD, 2021-2022 (GEAR)
- Philemon Putra, ECE, UCSD, 2021-2022 (GEAR)

- Shreyas Arora, ECE, UCSD, 2021-2022
- Farnia Nafarifard, ECE, UCSD, 2020-2021 (GEAR)
- Ryan Goh, ECE, UCSD, 2020-2021 (RSRI)
- Aaron Yu, CSE, UCSD, 2020-2021 (RSRI)
- Hannah Hui, ECE, UCSD, 2019-2021 (RSRI, SRIP)
- Ke Ou, ECE, UCSD, Summer 2021
- Juan Pablo Romero, Universidad Nacional Autonoma de Mexico, Summer 2021 (ENLACE)
- Patricia Martinez, Instituto Tecnologico de Reynosa, Summer 2021 (ENLACE)
- Angel Rafael Patino Guerrero, Cobach Plantel Miguel Hidalgo y Costilla, Summer 2021 (ENLACE)
- Kayoon Koh, Canyon Crest Academy, Summer 2021 (ENLACE)
- Xinyang Yu, ECE, UCSD, 2019-2021 (SRIP)
- Weifan Ou, ECE, UCSD, Summer 2020 (SRIP)
- Trung Tran, ECE, UCSD, Summer 2020
- Alex Levine, ECE, UCSD, 2018-2020
- Chang Han, ECE, UCSD, Summer 2019, 2020 (SRIP)
- Mohanad Ahmed, UCSD, Spring 2020
- Gyuseung Hwang, CSE, UCSD, Winter 2020
- Matthew Taber, Cal Poly, Summer 2019 (STARS)
- Bryan Sandoval, CETYS University, Summer 2019 (ENLACE)
- Pou-Chun Kung, National Sun Yat-sen University, Summer 2019 (ISRP)
- Bjorn Johnson, UCSD, Fall 2018 (RSRI)
- Darshan Bulsara, UC Merced, Summer 2018 (STARS)
- Mariana Hernández, Instituto Tecnológico Autónomo de México, Summer 2018 (ENLACE)
- Athena Tsai, National Sun Yat-sen University, Summer 2018 (ISRP)
- Richard Du, UCSD, Spring 2018
- Pengfei Li, Zhejiang University, Summer 2017 (ISRP)

Professional Activities

Journal and Conference Organization:

- 1. Associate Editor, IEEE Robotics and Automation Letters (RA-L), 2020, 2021, 2022, 2023, 2024.
- 2. Associate Editor, IEEE International Conference on Robotics and Automation (ICRA), 2017, 2018, 2019, 2024.
- 3. Editor, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2024.
- 4. Associate Editor, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2020, 2021, 2022, 2023.
- 5. Session Chair, IEEE International Conference on Robotics and Automation (ICRA), 2023, 2024.
- 6. Session Chair, Learning for Dynamics and Control (L4DC) Conference, 2023.
- 7. Workshops and Tutorials Co-Chair, IEEE International Conference on Robotics and Automation (ICRA), 2022.
- 8. Invited Session Co-organizer, Safe and Risk-aware Planning and Control for Learning-enabled Systems, American Control Conference (ACC), 2021.
- 9. Area Chair, Conference on Robot Learning (CoRL), 2020.
- 10. Session Chair, IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), 2020.
- 11. Session Chair, American Control Conference (ACC), 2019.
- 12. Associate Editor, The International Journal of Robotics Research, Special Issue on RSS 2018.
- 13. Session Chair, Robotics: Science and Systems (RSS), 2018.
- 14. Publications Chair, Robotics: Science and Systems (RSS), 2018.

Workshop Organization:

- 1. Co-organizer, Workshop on "Robotic Perception and Mapping: Frontier Vision and Learning Techniques," IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Detroit, MI, USA, October 2023.
- 2. Co-organizer, Workshop on "Integrated Perception, Planning, and Control for Physically and Contextually-Aware Robot Autonomy," IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Detroit, MI, USA, October 2023.
- 3. Co-organizer, Workshop on "Safe Robot Control with Learned Motion and Environment Models," IEEE International Conference on Robotics and Automation (ICRA), Xi'an, China, June 2021.
- 4. Program committee member, Workshop on "Algorithms and Architectures for Learning in-the-Loop Systems in Autonomous Flight," IEEE International Conference on Robotics and Automation (ICRA), Montreal, Canada, May 2019.
- 5. Program committee member, "Work-in-Progress Abstracts, Demos, and Posters," International Conference on Cyber-Physical Systems (ICCPS), Montreal, Canada, April, 2019.
- 6. Co-organizer, Workshop on "Perception, Inference, and Learning for Joint Semantic, Geometric, and Physical Understanding," IEEE International Conference on Robotics and Automation (ICRA), Brisbane, Australia, May 2018.
- 7. Program committee member, Workshop on "Informative Path Planning and Adaptive Sampling," IEEE International Conference on Robotics and Automation (ICRA), Brisbane, Australia, May 2018.
- 8. Co-organizer, Workshop on "Learning Perception and Control for Autonomous Flight: Safety, Memory, and Efficiency," Robotics: Science and Systems (RSS), Cambridge, MA, USA, July 2017.
- 9. Co-organizer, Workshop on "Robot-Environment Interaction for Perception and Manipulation," Robotics: Science and Systems (RSS) Conference, Ann Arbor, MI, USA, June 2016.

Government Activities:

- 1. NSF CISE Panelist: 2016, 2017, 2018, 2019, 2021, 2022, 2023.
- 2. NSF CNS Panelist: 2023.
- 3. NSF ENG Panelist: 2021.
- 4. Workshop on Foundations of Intelligent Sensing, Action and Learning sponsored by the Basic Research Office of the Assistant Secretary of Defense for Research and Engineering, Philadelphia, PA, October 2015.
- 5. NSF Workshop on Learning, Perception and Control, Arlington, VA, August 2015.

Reviewer:

- Journals: IEEE Transactions on Robotics (2019-present); IEEE Robotics and Automation Letters (2015present); The International Journal of Robotics Research (2015, 2020-present); Elsevier Robotics and Autonomous Systems (2015, 2017); Springer Autonomous Robots (2016, 2019, 2022); IEEE Sensors Journal (2013); IEEE Robotics and Automation Magazine (2014, 2015); IEEE Transactions on Automatic Control (2020-present); IFAC Automatica (2020-present); IEEE Control Systems Letters (2020present); IEEE Transactions on Control of Network Systems (2015, 2016); ASME Journal of Dynamic Systems, Measurement, and Control (2014, 2015); Elsevier Computer Vision and Image Understanding (2015, 2016); IEEE Transactions on Information Theory (2016, 2017); Springer Journal of Intelligent and Robotic Systems (2017); IEEE Transactions on Signal Processing (2017); IEEE Transactions on Aerospace and Electronic Systems (2018); IEEE Transactions on Signal and Information Processing over Networks (2018); Elsevier Artificial Intelligence (2021, 2022)
- **Conferences**: Robotics: Science and Systems (RSS) (2016-present), IEEE International Conference on Robotics and Automation (ICRA) (2014-present), IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS) (2012-present), Conference on Neural Information Processing Systems (NeurIPS) (2019), IEEE Conference on Computer Vision and Pattern Recognition (CVPR) (2016, 2019), European Conference on Computer Vision (ECCV) (2016), Conference on Robot Learning (CoRL) (2017), IEEE Conference on Decision and Control (CDC) (2015-present), American Control Conference

(ACC) (2016-present), European Control Conference (ECC) (2019, 2020), Conference on Learning for Dynamics and Control (L4DC) (2020-present), IFAC World Congress (2017), International Conference on Advanced Robotics (ICAR) (2015), IFAC Conference on Analysis and Design of Hybrid Systems (2017), IEEE International Conference on Automation Science and Engineering (CASE) (2015), IEEE Multi-conference on Systems and Control (2014), IEEE/SICE International Symposium on System Integration (2015)

Society Membership:

IEEE, Senior Member	2023 - Present
IEEE, Robotics and Automation Society	2014 - Present
IEEE, Control Systems Society	2023 - Present
Phi Beta Kappa Society	2008 - Present
IEEE, Member	2016 - 2023
IEEE, Student Member	2007 - 2016
IEEE, Communication Society	2012 - 2013
IEEE, Engineering in Medicine and Biology Society	2007 - 2008
American Society of Mechanical Engineers (ASME)	2007 - 2008

University Service:

- 1. UCSD ECE Graduate Recruiting and Admissions Committee, 2018, 2019, 2020, 2021, 2022, 2023, 2024.
- 2. UCSD ECE MS Comprehensive Exam Committee, 2018, 2019, 2020, 2021.

Ph.D. Committees:

- 1. Xiaoshuai Zhang, CSE PhD Thesis Proposal (Mar. 2024), UCSD
- 2. Ruihan Yang, ECE PhD Qualifying Exam (Mar. 2024), UCSD
- 3. Joao Marcos Correia Marques, CS PhD Thesis Proposal (Dec. 2023), UIUC
- 4. Tao-Yi Wan, MAE PhD Senate Exam (Dec. 2023), UCSD
- 5. Qiaojun Feng, ECE PhD Preliminary Exam (May 2019), Qualifying Exam (Feb. 2022), and Thesis Defense (Dec. 2023), UCSD
- 6. Luke Bhan, ECE PhD Preliminary Exam (Nov. 2023), UCSD
- 7. Fanbo Xiang, CSE PhD Thesis Proposal (Nov. 2023), UCSD
- 8. Henry Zhang, CSE PhD Thesis Proposal (Nov. 2023), UCSD
- 9. Chinmay Talegaonkar, ECE PhD Preliminary Exam (Nov. 2023), UCSD
- 10. Pol Mestres-ramon, MAE PhD Senate Exam (Oct. 2023), UCSD
- 11. Elizabeth Peiros, ECE PhD Preliminary Exam (Oct. 2023), UCSD
- 12. Yun Chang, AeroAstro PhD Thesis Proposal (Aug. 2023), MIT
- 13. Jingya Huang, ECE PhD Preliminary Exam (Jul. 2023), UCSD
- 14. Junsu Jang, ECE PhD Qualifying Exam (Jul. 2023), UCSD
- 15. Ya-Chien Chang, CSE PhD Thesis Proposal (Jun. 2023), UCSD
- 16. Xiao Liang, ECE PhD Preliminary Exam (Jun. 2023), UCSD
- 17. Christopher Crutchfield, ECE PhD Preliminary Exam (Jun. 2023) and Qualifying Exam (Dec. 2023), UCSD
- 18. Zhirui Dai, ECE PhD Preliminary Exam (Jun. 2023), UCSD
- 19. Hanwen Cao, ECE PhD Preliminary Exam (Jun. 2023), UCSD
- 20. Ruihan Yang, ECE PhD Preliminary Exam (Apr. 2023), UCSD
- 21. Michael McCreesh, MAE PhD Senate Exam (Jan. 2023), UCSD
- 22. David Paz, CSE PhD Thesis Proposal (Dec. 2022) and Thesis Defense (Aug. 2023), UCSD
- 23. Mohammad Ramadan, MAE PhD Senate Exam (Nov. 2022) and Thesis Defense (Apr. 2023), UCSD
- 24. Zihan Wu, SE PhD Qualifying Exam (Jun. 2022) and Thesis Defense (Mar. 2024), UCSD
- 25. Bang Du, ECE PhD Preliminary Exam (Jun. 2022), UCSD
- 26. Yinbo Chen, ECE PhD Preliminary Exam (Jun. 2022), UCSD

- 27. Xiaoyi Cai, AeroAstro PhD Preliminary Exam (May 2022) and Thesis Proposal (Dec. 2022), MIT
- 28. Eshter Grossman, ECE PhD Preliminary Exam (Apr. 2022), UCSD
- 29. Jiteng Mu, ECE PhD Preliminary Exam (Apr. 2022), UCSD
- 30. Yuzhe Qin, ECE PhD Preliminary Exam (Mar. 2022) and Qualifying Exam (Mar. 2023), UCSD
- 31. Jiacheng Cheng, ECE PhD Preliminary Exam (Feb. 2022) and Qualifying Exam (Dec. 2023), UCSD
- 32. Hala Abualsaud, ECE PhD Preliminary Exam (Dec. 2021), UCSD
- 33. Nikhil Shinde, ECE PhD Preliminary Exam (Dec. 2021) and Qualifying Exam (Dec. 2023), UCSD
- 34. Khoa Tran, MATH PhD Qualifying Exam (Sep. 2021), UCSD
- 35. Parker Lusk, AeroAstro PhD Proposal Defense (Sep. 2021) and Thesis Defense (Jun. 2023), MIT
- 36. Valentin Duruisseaux, Math PhD Qualifying Exam (Aug. 2021) and Thesis Defense (Nov. 2023), UCSD
- 37. Yuheng Zhi, ECE PhD Preliminary Exam (Aug. 2021), UCSD
- 38. Ramtin Hosseini, ECE PhD Preliminary Exam (Jun. 2021), UCSD
- 39. Zih-Yun Chiu, ECE PhD Preliminary Exam (Apr. 2021) and Qualifying Exam (Nov. 2023), UCSD
- 40. Aditya Arun, ECE PhD Preliminary Exam (Apr. 2021) and Qualifying Exam (May 2022), UCSD
- 41. Arash Farokhi Soofi, ECE PhD Preliminary Exam (Apr. 2021), UCSD
- 42. Jingpei Lu, ECE PhD Preliminary Exam (Feb. 2021) and Qualifying Exam (Nov. 2022), UCSD
- 43. Baoqian Wang, ECE PhD Preliminary Exam (Jan. 2021), Qualifying Exam (Nov. 2021), and Thesis Defense (Apr. 2023), UCSD
- 44. Wenyu Zhang, ECE PhD Preliminary Exam (Dec. 2020) and Qualifying Exam (Apr. 2023), UCSD
- 45. Arash Asgharivaskasi, ECE PhD Preliminary Exam (Dec. 2020) and Qualifying Exam (Dec. 2022), UCSD
- 46. Sean Bowman, ESE PhD Proposal (Dec. 2020) and Thesis Defense (Dec. 2021), UPenn
- 47. Imoleayo Abel, MAE PhD Senate Exam (Dec. 2020) and Thesis Defense (Jul. 2022), UCSD
- 48. Chih-Hui Ho, ECE PhD Qualifying Exam (Nov. 2020) and Thesis Defense (Mar. 2024), UCSD
- 49. Brent Schlotfeldt, ESE PhD Proposal (Nov. 2020) and Thesis Defense (Apr. 2021), UPenn
- 50. Menglai Li, ECE PhD Preliminary Exam (Sep. 2019), UCSD
- 51. Iman Adibnazari, MAE PhD Qualifying Exam (Aug. 2020), UCSD
- 52. Kelsey Saulnier, ESE PhD Proposal (Aug. 2020) and Thesis Defense (Nov. 2022), UPenn
- 53. Masih Haseli, MAE PhD Senate Exam (Jul. 2020) and Thesis Defense (Aug. 2022), UCSD
- 54. Thai Duong, ECE PhD Preliminary Exam (Apr. 2020) and Qualifying Exam (Jun. 2022), UCSD
- 55. Ehsan Zobeidi, ECE PhD Preliminary Exam (Mar. 2020), Qualifying Exam (Mar. 2022), Thesis Defense (Nov. 2023), UCSD
- 56. Dimitri Schreiber, ECE PhD Preliminary Exam (Mar. 2020), Qualifying Exam (Oct. 2021), and Thesis Defense (Nov. 2022), UCSD
- 57. Florian Richter, ECE PhD Preliminary Exam (Dec. 2019), Qualifying Exam (Mar. 2021), and Thesis Defense (May 2022), UCSD
- 58. Yi Li, ECE PhD Preliminary Exam (Sep. 2019) and Qualifying Exam (Mar. 2022), UCSD
- 59. Jongha Ryu, ECE PhD Qualifying Exam (Jun. 2019) and Thesis Defense (Jun. 2022), UCSD
- 60. John Ho, ECE PhD Preliminary Exam (May 2019), UCSD
- 61. Zhichao Li, ECE PhD Preliminary Exam (Apr. 2019), Qualifying Exam (Nov. 2021), and Thesis Defense (Nov. 2023), UCSD
- 62. Mo Shan, ECE PhD Preliminary Exam (Apr. 2019) and Qualifying Exam (Dec. 2021), UCSD
- 63. Yunsheng Li, ECE PhD Qualifying Exam (Apr. 2019) and Thesis Defense (Nov. 2021), UCSD
- 64. Bo Liu, ECE PhD Qualifying Exam (Apr. 2019) and Thesis Defense (Jun. 2021), UCSD
- 65. Pedro Morgado, ECE PhD Qualifying Exam (Mar. 2019) and Thesis Defense (May 2021), UCSD
- 66. Jacob Johnson, ECE PhD Preliminary Exam (Feb. 2019), Qualifying Exam (Mar. 2022), and Thesis Defense (Oct. 2023), UCSD
- 67. Carlos Nieto-Granda, ECE PhD Qualifying Exam (Jan. 2019) and Thesis Defense (Jan. 2020), UCSD
- 68. Ahmed Qureshi, ECE Preliminary Exam (Jan 2019), UCSD
- 69. Pedro P. V. Tecchio, ESE PhD Proposal (Dec. 2018) and Thesis Defense (Jul. 2019), UPenn

- 70. Kartik Mohta, ESE PhD Proposal (Aug. 2018) and Thesis Defense (Nov. 2018), UPenn
- 71. Aaron Ma, MAE PhD Senate Exam (Nov. 2018) and Thesis Defense (Feb. 2020), UCSD
- 72. Sikang Liu, MEAM PhD Proposal (May 2018) and Thesis Defense (Oct. 2018), UPenn
- 73. Michael Ostertag, ECE Preliminary Exam (Oct. 2018) and PhD Qualifying Exam (Mar. 2020), UCSD
- 74. Dylan Drotman, MAE PhD Senate Exam (Oct. 2018) and Thesis Defense (Mar. 2021), UCSD
- 75. Nachiket Deo, ECE PhD Qualifying Exam (Sep. 2018) and Thesis Defense (May 2022), UCSD
- 76. Greame Best, AMME PhD Thesis Committee (Jul. 2018), University of Sydney
- 77. Huan Yu, MAE PhD Senate Exam (Jun. 2018) and Thesis Defense (Jun. 2019), UCSD
- 78. Tianyu Wang, ECE PhD Preliminary Exam (May 2018) and Qualifying Exam (Jun. 2021), UCSD
- 79. Nikhil Das, ECE PhD Qualifying Exam (Nov. 2017) and Thesis Defense (May 2020), UCSD
- 80. Stephen Chen, MAE PhD Senate Exam (Jul. 2017) and Thesis Defense (Aug. 2019), UCSD
- 81. Daniel Yang, MAE PhD Senate Exam (Dec. 2016), UCSD

M.S. Committees:

- 1. Rikkert Lensen, ME M.S. Thesis Committee (Dec. 2023), Eindhoven University of Technology
- 2. Nathan Cusson-nadeau, MAE M.S. Thesis Committee (Jul. 2023), UCSD
- 3. Alexander Paskal, ECE M.S. Thesis Committee (Jun. 2023), UCSD
- 4. Hojoon Shin, MAE M.S. Thesis Committee (Jun. 2023), UCSD
- 5. Sriram Shreedharan, ECE M.S. Thesis Committee (Jun. 2023), UCSD
- 6. Jason Lim, ECE M.S. Thesis Committee (Mar. 2023), UCSD
- 7. Christopher Crutchfield, ECE M.S. Thesis Committee (Jul. 2022), UCSD
- 8. Joseph Chang, ECE M.S. Thesis Committee (Aug. 2021), UCSD
- 9. Mohammed Alyaseen, MAE M.S. Thesis Committee (May 2021), UCSD
- 10. Liliang Ren, ECE M.S. Thesis Committee (May 2020), UCSD
- 11. Iman Adibnazari, ECE M.S. Thesis Committee (May 2020), UCSD
- 12. Taylor Henderson, ECE M.S. Thesis Committee (May 2020), UCSD
- 13. Sutej Kulgod, ECE M.S. Thesis Committee (May 2020), UCSD
- 14. You-Yi Jau, ECE M.S. Thesis Committee (May 2020), UCSD
- 15. Yuzhe Qin, ECE M.S. Thesis Committee (Apr. 2020), UCSD
- 16. James Smith, ECE M.S. Thesis Committee (Mar. 2020), UCSD
- 17. David Paz, ECE M.S. Thesis Committee (Feb. 2020), UCSD
- 18. Alexander Khoury, ECE M.S. Thesis Committee (Aug. 2019), UCSD
- 19. Ibrahim Akbar, ECE M.S. Thesis Committee (Aug. 2019), UCSD
- 20. Weiqi Xu, CSE M.S. Thesis Committee (May 2019), UCSD
- 21. Brian Wilcox, ECE M.S. Thesis Committee (Mar. 2019), UCSD
- 22. Aravind Seetharaman, ECE M.S. Thesis Committee (Mar. 2019), UCSD
- 23. Andrew Saad Abd El-Messih, ECE M.S. Thesis Committee (Dec. 2018), UCSD
- 24. Nicholas Ha, ECE M.S. Thesis Committee (Nov. 2018), UCSD
- 25. Mayur Bency, ECE M.S. Thesis Committee (Jun. 2018), UCSD
- 26. Kenny Chen, ECE M.S. Thesis Committee (Jun. 2018), UCSD
- 27. Francis Joseph, MAE M.S. Thesis Committee (May 2018), UCSD
- 28. Matthew Epperson, ECE M.S. Thesis Committee (Mar. 2018), UCSD