
Kostas E. Bekris

Associate Professor

Computer Science Department
Rutgers University
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EMPLOYMENT**Rutgers, The State University of New Jersey**

Associate Professor

July '16 onward

Assistant Professor

July '12 - June '16

Computer Science Department, School of Arts and Sciences

University of Nevada, Reno

Assistant Professor

July '08 - June '12

Computer Science and Engineering Department, College of Engineering

Rice University

Research & Teaching Assistant

Aug. '01 - June '08

Computer Science Department, School of Engineering

Foundation for Research and Technology, Hellas (FORTH)

Undergraduate Research Assistant

Jan. '99 - July '01

Computer Vision and Robotics Laboratory (CVRL)

EDUCATION**Rice University**, Houston, TX

2004 - 2008

Ph.D. in Computer Science

Thesis title: "Informed Planning and Safe Distributed Replanning under Physical Constraints"

Thesis Advisor: Professor Lydia E. Kavraki

Rice University, Houston, TX

2001 - 2004

M.S. in Computer Science

Thesis: "Reactive Range-Free Landmark Navigation without Scene Reconstruction"

Thesis Advisor: Professor Lydia E. Kavraki

University of Crete, Greece

1997 - 2001

B.S. in Computer Science, *Best in Class*

Diploma Thesis: "Graph-Theory Based Image Segmentation Using Color Content"

Thesis Advisor: Dr. Antonis Argyros

FUNDING FROM FEDERAL AND STATE AGENCIES**National Science Foundation (NSF)**

National Robotics Initiative (NRI): "NRI: INT: COLLAB: Integrated Modeling and Learning for Robust Grasping and Dexterous Manipulation with Adaptive Hands", (PI: Kostas Bekris, Co-PIs: Abdeslam Boularias (Rutgers), Aaron Dollar (Yale University)), IIS-1734492, 2017-2021.

Total award: \$1,500,000 - Rutgers participation: \$867,729 - Bekris' participation: \$438,945.

National Science Foundation (NSF)

Smart and Autonomous Systems (S&AS): "S&AS: FND: Reflective Learning of Stochastic Physical Models for Robust Manipulation", (PI: Abdeslam Boularias, co-PIs: Kostas Bekris and Mubbisir Kapadia), IIS-1723869, 2017-2020.

Total award for Rutgers: \$682,646 - Bekris' participation: \$227,548.

National Aeronautics and Space Administration (NASA)

Early CAREER Faculty award: "Robust Planning for Dynamic Tensegrity Structures", (Single PI: Kostas Bekris), Grant Number: NNX15AU47G, 2015-2018.

Total award for Rutgers/Bekris: \$600,000

National Science Foundation (NSF)

Information and Intelligent Systems (IIS): "RI: Small: Taming Combinatorial Challenges in Multi-Object Manipulation" (PI: Kostas Bekris, co-PI: Dr. Jingjin Yu), IIS:1617744, 2016-2019.

Total award for Rutgers: \$468,500 - Bekris' participation \$234,250.

National Science Foundation (NSF)

Information and Intelligent Systems (IIS): "EAGER: Provably Efficient Motion Planning After Finite Computation Time" (Single PI: Kostas Bekris), IIS:1451737, 2014-2016.

Total award for Rutgers/Bekris: \$175,000.

North Pacific Research Board (NPRB)

Annual Research Award: "Developing telemetry-based payload control for determining the distribution and movements of marine fish using autonomous underwater vehicles" (PI: Dr. Thomas Grothues), Project 1529, 2015-2016.

Total award for Rutgers: \$125,000 - Bekris' participation: \$35,000.

The Port Authority of New York & New Jersey (NY/NJ PA)

"Crowd Management and LiDAR to Assist with Crowd Management and PA Bus Terminal Redesign" (PI: Dr. Fred Roberts - DHS COE CCICADA), 2015-2016.

Total award for Rutgers: \$300,000 - Bekris' participation: \$100,000.

National Aeronautics and Space Administration (NASA)

"Robust Path Planning for Space Exploration Rovers", 2013 NASA Space Technology Research Fellowship for Zakary Littlefield (Advisor: Kostas Bekris), Grant Number NNX13AL71H, 2013-2017.

Total award for Rutgers: \$272,000.

National Science Foundation (NSF)

United States-Israel Collaboration in Computer Science - Travel Grant: "A Framework for Composite Techniques in Motion Planning" (PI: Kostas Bekris - Israel Collaborator: Dan Halperin, Tel Aviv University), BSF:2012166, 2013-2017.

Total award for Rutgers/Bekris: \$40,000.

National Science Foundation (NSF)

Cyber-Physical Systems - Small: "Real-time, Simulation-based Planning and Asynchronous Coordination for Cyber-Physical Systems" (single PI: Kostas Bekris), Award CNS 0932423, 2009-2013.

Total award for Bekris: \$599,970.

National Aeronautics and Space Administration (NASA)

"Advanced Computer Vision, Robotics, and Visualization Algorithms for Improving Planetary Exploration and Understanding" (PI: George Bebis), 2011-2012.

Total award: \$1,000,000 - Bekris' participation: \$75,000.

Office of Naval Research (ONR)

"Extending the Mission: Air Support in Intelligent Aggressors" (PI: Sushil Louis, co-PI: Kostas Bekris), 2010-2012.

Total award: \$500,000 - Bekris' participation: \$120,000.

COLLABORATION WITH INDUSTRY

ExxonMobil

Pilot corporate project “Programming Painting Operations with a Dual-arm Manipulator for Environmental Studies”, (ExxonMobil collaborator: Jennifer Shin), 2017.

Total contract for Rutgers/Bekris: \$15,000.

Intelligent Automation Inc. (IAI)

BAA STTR 2017.A Phase I: “ORION: Operational Robot with Intelligent Off-road Navigation”, (Intelligent Automation Inc. PI: Dr. Yoichiro Endo (IAI), Rutgers PI: Kostas Bekris), 2017.

Total award: \$200,000 - Rutgers’/Bekris’ participation: \$50,000.

Intelligent Automation Inc. (IAI)

BAA STTR 2012.A Phase II: Subcontract “Bio-Inspired Visual Navigation: From Landmarks via Bearing to Controls” (Rutgers PI: Kostas Bekris), 2014-2015.

Total award: \$750,000 - Rutgers’/Bekris’ participation: \$230,000.

PUBLICATION LIST

Journal Articles

1. Krontiris, A., Bekris, K. E., “Tradeoffs In The Computation Of Minimum Constraint Removal Paths For Manipulation Planning”, *Advanced Robotics Journal* (accepted), 2017.
2. Correll, N., Bekris, K. E., Berenson, D., Brock, O., Causo, A., Hauser, K., Okada, K., Rodriguez, A., Romano, J. and Wurman, P., 2016. “Analysis and Observations From The First Amazon Picking Challenge”, *IEEE Transactions on Automation Science and Engineering*, Issue 99, pp. 1-17, October 2016.
3. Li, Y., Littlefield, Z. and Bekris, K. E., “Asymptotically Optimal Sampling-based Kinodynamic Planning”, *International Journal of Robotics Research (IJRR)*, (invited as one of the best papers of WAFFR’14), vol. 35, issue 5, pp. 528-564, April 2016.
4. Rennie, C., Shome, R., Bekris, K. E. and De Souza, F. A., 2016. “A Dataset For Improved RGBD-Based Object Detection And Pose Estimation For Warehouse Pick-And-Place”, *IEEE Robotics and Automation Letters (RA-L)*, (also appearing at ICRA 2016), vol. 1, issue 2, pp 1179 - 1185, February 2016.
5. Bekris, K. E., Shome, R., Krontiris, A., Dobson, A., “Cloud Automation: Precomputing Road Maps For Flexible Manipulation”, *IEEE/RAS Robotics and Automation Magazine (RAM)*, May 2015.
6. Dobson, A., Bekris, K. E., “Sparse Roadmap Spanners for Asymptotically Near-Optimal Motion Planning”, *International Journal of Robotics Research*, 33(1), 2014.
7. Apostolopoulos, I., Folmer, E., Fallah, N., Bekris, K. E., “Integrated Online Localization and Navigation for People with Visual Impairments using Smart Phones”, *ACM Transactions on Interactive Intelligent Systems*, 3(4), 2014.
8. Marble, J. D., Bekris, K. E., “Asymptotically Near-Optimal Planning with Probabilistic Roadmap Spanners”, *IEEE Transactions on Robotics*, vol. 29, no.2, pp. 432-444, 2013.
9. Fallah, N., Bekris, K. E., Folmer, E., “Human Navigation Systems - A Survey”, *Interacting with Computers*, vol. 25, no. 1, pp. 21-33, 2013.
10. Bekris, K. E., Grady, D. K., Moll, M. and Kavraki, L., “Safe Distributed Motion Coordination for Second-Order Systems with Different Planning Cycles”, *International Journal of Robotic Research*, vol. 31, no. 2, pp. 129-149, February 2012.
11. Bekris, K. E., Tsianos, K. E. and Kavraki, L., “Safe and Distributed Kinodynamic Replanning for Vehicular Networks”, *ACM Journal on Mobile Networks and Applications (MONET)*, 14:292-308, 2009.

12. Plaku, E., Bekris, K. E., Chen, B. Y., Ladd, A. M., and Kavraki, L., "Sampling-Based Roadmap of Trees for Parallel Motion Planning", *IEEE Transactions on Robotics*, vol. 21, n.4, pp. 597-608, August 2005.
13. Argyros, A. A., Bekris, K. E., Orphanoudakis, S. C., and Kavraki, L., "Robot homing by exploiting panoramic vision". *Autonomous Robots*, vol. 19, n. 1, pp. 7- 25, July 2005.
14. Ladd, A. M., Bekris, K. E., Rudys, A., Kavraki, L. and Wallach, D. S., "Robotics-Based Location Sensing Using Wireless Ethernet", *Wireless Networks*, vol. 11, no. 1-2, pp. 189-204, Jan. 2005.
15. Ladd, A. M., Bekris, K. E., Rudys, A., Kavraki, L., and Wallach, D. S., "On the Feasibility of Using Wireless Ethernet for Indoor Localization", *IEEE Transactions on Robotics and Automation*, 20(3), pp. 555-558, June 2004.
16. Bekris, K. E., Hatzopoulos, K., Kazazakis, G., Kontolemakis, G., Masvoula, M., Argyros, A. A., Trahanias, P., "PYTHEAS: An Integrated Robotic System with Autonomous Navigation Capabilities", *Journal of Image Processing and Communications*, vol.8, no.2, pp.81-92, 2002.

Volumes

1. Kallman, M. and Bekris, K. E. (eds), "Proceedings of the International Conference on Motion in Games (MIG) 2012", Springer, Rennes, France, November 2012.

Book Chapters

1. Bekris, K. E., Argyros, A. A., and Kavraki, L., "Exploiting Panoramic Vision for Angle-Based Robot Navigation", In K. Daniilidis and R. Kleete, editors, *Imaging Beyond the Pinhole Camera*, Lecture Notes in Computer Science, Vol. 33, pp. 229-251, Springer, 2006.

Publications in Refereed Conferences

2017

1. Shuai, J., Stiffler, N., Krontiris, A., Bekris, K. E. and Yu, J., "High-Quality Tabletop Rearrangement With Overhand Grasps: Hardness Results And Fast Methods", In *Robotics: Science and Systems (RSS)*, Cambridge, MA, *Nominee for Best Student Paper Award*.
2. Surovik, D., and Bekris, K. E., "Deep Coverage: Motion Synthesis In The Data-Driven Era", In *International Symposium on Robotics Research (ISRR)*, Puerto Varas, Chile.
3. Littlefield, Z., Surovik, D., Wang, W. and Bekris, K. E., "From Quasi-Static To Kinodynamic Planning For Tensegrity Locomotion", In *International Symposium on Robotics Research (ISRR)*, Puerto Varas, Chile.
4. Dobson, A. K. Solovey, R. Shome, D. Halperin, and Bekris, K. E., "Scalable Asymptotically-Optimal Multi-Robot Motion Planning", In *1st IEEE International Symposium on Multi-Robot and Multi-Agent Systems (MRS)*, Los Angeles, CA, USA.
5. Chaitanya, M., Bekris, K. E. and Boularias, A., "A Self-Supervised Learning System For Object Detection Using Physics Simulation And Multi-View Pose Estimation", In *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Vancouver, Canada.
6. Shome, R., and Bekris, K. E., "Improving The Scalability Of Asymptotically Optimal Motion Planning For Humanoid Dual-Arm Manipulators" In *IEEE International Conference on Humanoid Robots*, Birmingham, UK.
7. Littlefield, Z., and Bekris, K. E., "Informed Asymptotically Near-Optimal Planning For Field Robots With Dynamics", In *11th Conference on Field and Service Robotics (FSR)*, Zurich, Switzerland.
8. Azizi, V., Kimmel, A., Bekris, K. E. and Kapadia, M., "Geometric Reachability Analysis For Grasp Planning In Cluttered Scenes For Varying End-Effectors", In *13th IEEE International Conference on Automation Science and Engineering (CASE)*, Xi'an, China.
9. Liu, R., Kwak, D., Devarakonda, S., Bekris, K. E., Iftode, L., "Investigating Remote Driving Over The Lte Network", In *AutomotiveUI*, Oldenburg, Germany.

2016

10. Krontiris, A. and Bekris, K. E., "Efficiently Solving General Rearrangement Tasks: A Fast Extension Primitive For An Incremental Sampling-Based Planner", In International Conference on Robotics and Automation (ICRA), Stockholm, Sweden.
11. Littlefield, Z., Zhu, S., Kourtev, C., Psarakis, Z., Shome, R., Kimmel, A., Dobson, A., De Souza, F. A., and Bekris, K. E., "Evaluating End-Effector Modalities For Warehouse Picking: A Vacuum Gripper Vs A 3-Finger Underactuated Hand", In 12th annual IEEE International Conference on Automation Science and Engineering (IEEE CASE), Fort Worth, TX.
12. Littlefield, Z., Caluwaerts, K., Bruce, J. and SunSpiral, V. and Bekris, K. E., "Integrating Simulated Tensegrity Models With Efficient Motion Planning For Planetary Navigation", In International Symposium on Artificial Intelligence, Robotics and Automation in Space (i-SAIRAS 2016), Beijing, China.
13. Krontiris, A., Bekris, K. E. and Kapadia, M., "Acumen: Activity-Centric Crowd Authoring Using Influence Maps", In 29th International Conference on Computer Animation and Social Agents (CASA), Geneva, Switzerland.

2015

14. Krontiris, A., and Bekris, K. E., "Dealing With Difficult Instances of Object Rearrangement", In Robotics: Science and Systems (RSS), Rome, Italy, *Nominee for Best Paper and Best Student Paper Award*.
15. Littlefield, Z., Kurniawati, H., Bekris, K. E. and Klimenko, D., "The Importance Of A Suitable Distance Function In Belief-Space Planning", In International Symposium on Robotic Research (ISRR), Sestri Levante, Italy.
16. Dobson, A., Moustakides, G. V. and Bekris, K. E., "Geometric Probability Results For Bounding Path Quality In Sampling-Based Roadmaps After Finite Computation", In IEEE International Conference on Robotics and Automation (ICRA), Seattle, WA.
17. Dobson, A., and Bekris, K. E., "Planning Representations And Algorithms For Prehensile Multi-Arm Manipulation", In IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Hamburg, Germany.
18. Krontiris, A. and Bekris, K. E. "Computational Tradeoffs Of Search Methods For Minimum Constraint Removal Paths", In Symposium on Combinatorial Search (SoCS), Dead Sea, Israel.
19. Kolchmeyer, R., Dobson, A., and Bekris, K. E., "Expected Path Degradation When Searching Over A Sparse Grid Hierarchy", In Symposium on Combinatorial Search (SoCS), Ein Gedi, Dead Sea, Israel.

2014

20. Li, Y., Littlefield, Z., Bekris, K. E., "Sparse Methods For Efficient Asymptotically Optimal Kinodynamic Planning", Workshop on the Algorithmic Foundations of Robotics (WAFR), Istanbul, Turkey, August 2014.
21. Krontiris, A., Shome, R., Dobson, A., Kimmel, A., Bekris, K. E., "Rearranging Similar Objects With A Manipulator Using Pebble Graphs" In IEEE-RAS International Conference on Humanoid Robots (HUMANOIDS), Madrid, Spain, November 2014.
22. Zhao, M., Shome, R., Yochelson, I., Bekris, K. E., Kowler, E. "An Experimental Study For Identifying Features Of Legible Manipulator Paths", International Symposium on Experimental Robotics (ISER), Marrakech/Essaouira, Morocco, June, 2014.
23. Kimmel, A., Bekris, K. E., "Decentralized Multi-Agent Path Selection Using Minimal Information", International Symposium on Distributed Autonomous Robotic Systems (DARS), Daejeon, Korea, November 2014.
24. Littlefield, Z., Krontiris, A., Kimmel, A., Dobson, A., Shome, R., Bekris, K. E., "An Extensible Software Architecture For Composing Motion And Task Planners", International Conference on Simulation, Modeling, and Programming for Autonomous Robots (SIMPAN), Bergamo, Italy, October 2014.
25. Dobson, A., Bekris, K. E., "Improved Heuristic Search For Computing Sparse Data Structures For Motion Planning" In Symposium on Combinatorial Search (SoCS), Prague, Czech Republic, August, 2014.

2013

26. Dobson, A., Bekris, K. E., "Finite-Time Near-Optimality Properties of Sampling-Based Motion Planners", IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Tokyo Big Sight, Japan, November 3-7, 2013.
27. Littlefield, Z., Li, Y., Bekris, K. E., "Sampling-based Motion Planning with Asymptotic Near-Optimality Guarantees for Systems with Dynamics", IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), Tokyo Big Sight, Japan, November 3-7, 2013.
28. Krontiris, A., Luna, R., Bekris, K. E., "From Feasibility Tests to Path Planners for Multi-Agent Pathfinding", Symposium on Combinatorial Search (SoCS), Leavenworth, WA, USA, July 11-13, 2013.
29. Dobson, A., Bekris, K. E., "Improving Sparse Roadmap Spanners", IEEE International Conference on Robotics and Automation (ICRA), Karlsruhe, Germany, May 6-10, 2013.

2012

30. Kimmel, A., Dobson, A., Littlefield, Z., Krontiris, A., Marble, J., Bekris, K. E., "PRACSYS: An Extensible Architecture for Composing Motion Controllers and Planners", Simulation, Modeling and Programming for Autonomous Robots (SIMPAN), Tsukuba, Japan, 5-8 November, 2012.
31. Dobson, A., Krontiris, A., Bekris, K. E., "Sparse Spanner Roadmaps", Workshop on the Algorithmic Foundations of Robotics (WAFR), Boston, MA, 13-15 June 2012.
32. Fallah, N., Apostolopoulos, I., Bekris, K. E., Folmer, E., "The User as a Sensor: Navigating Users with Visual Impairments in Indoor Spaces using Tactile Landmarks", ACM SIGCHI Conference on Human Factors in Computing Systems (CHI-12), Austin, TX, May 5-10, 2012.
33. Kimmel, A., Dobson, A., Bekris, K. E., "Maintaining Team Coherence under the Velocity Obstacle Framework", Eleventh International Conference on Autonomous Agents and Multiagent Systems (AAMAS-12), Valencia, Spain, 2012.
34. Sajid, Q., Luna, R., Bekris, K. E., "Multi-Agent Pathfinding with Simultaneous Execution of Single-Agent Primitives", Fifth Symposium on Combinatorial Search (SoCS), Niagara Falls, CA, July 19-21, 2012.
35. Marble, J., Bekris, K. E., "Small Asymptotically Near-Optimal Roadmaps", IEEE International Conference on Robotics and Automation (ICRA-12), Minneapolis, MN, 2012.
36. Krontiris, T., Louis, S., Bekris, K. E., "Multi-Modal Path Planning for Dynamic Formations of Non-holonomic Systems", IEEE International Conference on Robotics and Automation (ICRA-12), Minneapolis, MN, 2012.
37. Apostolopoulos, I., Fallah, N., Folmer, E., Bekris, K. E., "Integrated Online Localization and Navigation for People with Visual Impairments using Smart Phones", IEEE International Conference on Robotics and Automation (ICRA-12), Minneapolis, MN, 2012.
38. Navkar, N. V., Deng, Z., Shah, D. J., Bekris, K. E., Tsekos, N., "Visual and Force-Feedback Guidance for Robot-Assisted Interventions in the Beating Heart with Real-Time MRI", IEEE International Conference on Robotics and Automation (ICRA-12), Minneapolis, MN, 2012.

2011

39. Marble, J. and Bekris, K. E., "Computing Spanners of Asymptotically Optimal Probabilistic Roadmaps", IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), San Francisco, CA, 25-30 Sept., 2011.
40. Luna, R. and Bekris, K. E., "Efficient and Complete Centralized Multi-Robot Path Planning", IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), San Francisco, CA, 25-30 Sept., 2011.
41. Krontiris, A. and Bekris, K. E., "Using Minimal Communication to Improve Decentralized Conflict Resolution for Non-holonomic Vehicles", IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), San Francisco, CA, 25-30 Sept., 2011.

42. Marble, J. and Bekris, K. E.. "Asymptotically Near-Optimal is Good Enough for Motion Planning", 15th International Symposium on Robotics Research (ISRR), Flagstaff, AZ, Aug. 28 - Sept. 1, 2011.
43. Luna, R. and Bekris, K. E.. "Solving Fully-Coupled Multi-Robot Path Planning with Sequential Plans", Intern. Joint Conf. on Artificial Intelligence (IJCAI), Barcelona, Spain, July 11-22, 2011.
44. Krontiris, A., Louis, S. and Bekris, K. E.. "General Dynamic Formations for Non-holonomic Systems Along Planar Curvilinear Coordinates", IEEE Intern. Conf. on Robotics and Automation (ICRA), Shanghai, China, May 9-13, 2011.
45. Li, Y. and Bekris, K. E.. "Learning Approximate Cost-to-Go Metrics To Improve Sampling-based Motion Planning", IEEE Intern. Conf. on Robotics and Automation (ICRA), Shanghai, China, May 9-13, 2011.

2010

46. Grady, D. K., Bekris, K. E. and Kavraki, L.. "Asynchronous Distributed Motion Planning with Safety Guarantees under Second-Order Dynamics", Workshop on Algorithmic Foundations of Robotics (WAFR), Singapore, 13-15 Dec. 2010.
47. Krontiris, T., Louis, S. and Bekris, K. E., "Simulating Planar Aircraft Formations Along Curvilinear Coordinates", Third Int. Conf. on Motion in Games (MIG), Zeist, Netherlands, 14-16 Nov., 2010.
48. Luna, R. and Bekris, K. E., "Network-Guided Multi-Robot Path Planning in Discrete Representations", IEEE/RSJ Inter. Conf. on Intelligent Robots and Systems (IROS), Taipei, Taiwan, Oct. 2010.
49. Yuksel, M., Bekris, K. E., Evrenosogly, C. Y., Gunes, M. H., Fadali, S., Etezadi-Amoli, M., Harris, F., "Open Cyber-Architecture for Electrical Energy Markets", 1st IEEE LCN Workshop on Smart Grid Networking Infrastructure, Denver, Colorado, USA, 11-14 Oct. 2010.
50. Apostolopoulos, E., Fallah, N., Folmer, E. and Bekris K. E., "Feasibility of Interactive Localization and Navigation of People with Visual Impairments", IEEE Intelligent Autonomous Systems (IAS), 2010.
51. Luna, R., Oyama, A. and Bekris, K. E., "Network-Guided Multi-Robot Path Planning for Resource-Constrained Planetary Rovers", 10th Int. Symp. on Artificial Intelligence, Robotics and Automation in Space (i-SAIRAS), Sapporo, Japan, Aug. 2010.
52. Li, Y., and Bekris, K. E.. "Balanced State-Space Coverage in Planning with Dynamics", IEEE Intern. Conf. on Robotics and Automation (ICRA), Anchorage, AK, May 2010.

before 2010

53. Motwani, R., Harris, J.-F. and Bekris, K. E., "A Proposed Digital Rights Management System for 3D Graphics Using Biometric Watermarks", IEEE Inter. Workshop on Digital Rights Management (CCNC), 2009.
54. Bekris, K. E. and Kavraki, L., "Informed and Probabilistically Complete Search for Motion Planning under Differential Constraints", First International Symposium on Search Techniques in Artificial Intelligence and Robotics (STAIR), July 13 -14, Chicago, IL, 2008.
55. Bekris, K. E., Tsianos, K. and Kavraki, L., "A Distributed Protocol for Safe Real-Time Planning of Communicating Vehicles with Second-Order Dynamics", First Intl. Conference on Robot Communication and Coordination (ROBOCOMM), Athens, Greece, Oct. 15-17, 2007 - *Best Student Paper award*.
56. Bekris, K. E., Tsianos, K. and Kavraki, L., "A Decentralized Planner that Guarantees the Safety of Communicating Vehicles with Complex Dynamics that Replan Online", IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), San Diego, CA, 29 Oct.-2 Nov. 2007.
57. Bekris, K. E. and Kavraki, L., "Greedy but Safe Replanning under Kinodynamic Constraints", IEEE Intern. Conf. on Robotics and Automation (ICRA), pp. 704-710, Rome, Italy, April 2007.
58. Plaku, E., Bekris, K. E. and Kavraki, L., "OOPS for Motion Planning: An Online, Open-source, Programming System", IEEE International Conference on Robotics and Automation (ICRA), pp. 3711-3716, Rome, Italy, April 2007.
59. Bekris, K. E., Glick, M. and Kavraki, L., "Evaluation of Algorithms for Bearing-Only SLAM", IEEE Intern. Conf. on Robotics and Automation (ICRA), pp. 1937-1943, Orlando, FL, May 15-19, 2006.

60. Bekris, K. E., Argyros, A. A., and Kavraki, L., "New Methods for Reaching the Entire Plane with Angle-Based Navigation.", IEEE International Conference on Robotics and Automation (ICRA), pp. 2373-2378, New Orleans, LA, April 2004.
61. Akinc, M., Bekris, K. E., Chen, B. Y., Ladd, A. M., Plaku, E., and Kavraki, L., "Probabilistic Roadmaps of Trees for Parallel Computation of Multiple Query Roadmaps" Intern. Symposium on Robotics Research (ISRR), pp. 80-96, Sienna, Italy, October 2003. Proceedings published as: Springer Tracts in Advanced Robotics, vol. 15, editors: Dario, P. and Chatila, R.
62. Bekris, K. E., Chen, B. Y., Ladd, A. M., Plaku, E., and Kavraki, L., "Multiple Query Probabilistic Roadmap Planning Using Single Query Planning Primitives", IEEE/RJS Intern. Conf. on Intelligent Robots and Systems (IROS), pp. 656-661, Las Vegas, NV, October 2003.
63. Ladd, A. M., Bekris, K. E., Rudys, A., Marceau, G., Kavraki, L., and Wallach, D. S., "Robotics-Based Location Sensing using Wireless Ethernet", Eight ACM Intern. Conf. on Mobile Computing and Networking (MOBICOM), pp. 227-238, ACM Press, Atlanta, GE, September 2002.
64. Ladd, A. M., Bekris, K. E., Marceau, G., Rudys, A., Kavraki, L., and Wallach, D. S., "Using Wireless Ethernet for Localization", IEEE/RJS Intern. Conf. on Intelligent Robots and Systems (IROS), pp. 402-408, IEEE Press, Lausanne, Switzerland, 30 Sept. - 5 Oct. 2002.
65. Argyros, A. A., Bekris, K. E. and Orphanoudakis, S., "Robot Homing based on Corner Tracking in a Sequence of Panoramic Images", Computer Vision and Pattern Recognition Conference (CVPR), 11-13 December 2001, Hawaii, USA.
66. Bekris, K. E., K. Hatzopoulos, G. Kazazakis, G. Kontolemakis, M. Masvoula, N. Tsvourakis, A.A. Argyros and P. Trahanias., "PYTHEAS: An Integrated Robotic System with Autonomous Navigation Capabilities", Pan Hellenic Conference in Robotics and Automation (KTISIVIOS), 28-29 July 2001, Santorini, Greece.

Workshop Reports (Refereed)

1. Kimmel, A. and Bekris, K. E., "Scheduling Pick-And-Place Tasks For Dual-Arm Manipulators Using Incremental Search On Coordination Diagrams", Planning and Robotics (PlanRob), London, UK, 2016.
2. Kalokyri, V., Shome, R., Yochelson, I., Bekris, K. E., "A Single-Switch Scanning Interface for Robot Control by Quadriplegics", IEEE/RSJ IROS workshop on "Assistive Robots for Individuals with Disabilities: HRI Issues and Beyond", Chicago, IL, USA, September 2014.
3. Kimmel, A., Bekris, K. E., "Decentralized Adaptive Path Selection for Multi-Agent Conflict Minimization", ICAPS 2014 workshop on "Planning and Robotics", Portsmouth, NH, USA, June 2014.
4. Kimmel, A., Bekris, K. E., "Minimizing Conflicts Between Moving Agents over a Set of Non-Homotopic Paths Through Regret Minimization", AAAI 2013 Workshop on Intelligent Robotic Systems, held in conjunction with the Twenty-Seventh AAAI conference (AAAI-13), Bellevue, Washington, USA, July 2013.
5. Bekris, K. E., "Avoiding Inevitable Collision States: Safety and Computational Efficiency in Replanning with Sampling-based Algorithms", in the Workshop on Guaranteeing Safe Navigation in Dynamic Environments, held in conjunction with the Intl. Conf. on Robotics and Automation (ICRA), Anchorage, AK, May 2010.
6. Bekris, K. E., Tsianos, K. T. and Kavraki, L., "Real-Time Kinodynamic Planning: Physically-Realistic, Faster, Safer and Distributed", in the Workshop for Algorithmic Motion Planning for Autonomous Robots in Challenging Environments, held in conjunction with the Intl. Conf. on Intelligent Robots and Systems (IROS), San Diego, USA, Oct. - Nov. 2007.
7. Bekris, K. E., Ladd, A. and Kavraki, L., "Efficient Motion Planners for Systems with Dynamics", in the Workshop for Collision-free Motion Planning for Dynamic Systems, held in conjunction with the Intl. Conf. on Robotics and Automation (ICRA), Rome, Italy, April 2007.

Theses

1. Bekris, K. E., "Informed Planning and Safe Distributed Replanning under Physical Constraints", Computer Science, Houston, TX, Rice University (PhD Thesis), June 2008.
2. Bekris K E., "Reactive Range-Free Landmark Navigation without Scene Reconstruction", Computer Science, Houston, TX, Rice University (MS Thesis), February 2004.

HONORS

Awards, Nominations and Fellowships

- *Nomination for Best Student Paper* award at the “Robotics: Science and Systems” (RSS) conference taking place in Cambridge, MA, July 2017.
- *Early CAREER Faculty* award by the National Aeronautics and Space Administration, 2015-2018.
- *Nomination for Best Paper and Best Student Paper* award at the “Robotics: Science and Systems” (RSS) conference taking place in Rome, Italy, July 2015.
- Best Teacher Award from the Computer Science Graduate Student Society of Rutgers University, May 2015.
- Best Reviewer Award, “Robotics: Science and Systems” (RSS) conference, July 2014.
- *Nomination for Best Medical Robotics Paper* award at the IEEE International Conference on Robotics and Automation (ICRA) that took place in Minneapolis, MN, 2012.
- Leadership in *Ethical Science award* by PETA (People for the Ethical Treatment of Animals) for the development of a navigation system for blind people based on smartphone technology, 2012.
- *Best Student Paper* award at the First International Conference on Robot Communication and Coordination (ROBOCOMM), 2007.
- First place at the Poster Competition of the Corporate Affiliates Meeting, Rice University, 2007.
- Nettie S. Autrey Graduate Fellowship, Rice University, 2006.
- First place at the Poster Competition of the Corporate Affiliates Meeting, Rice University, 2006.
- George R. Brown Fellowship, Rice University, for excellent academic performance, 2004.
- Hellenic Professional Society of Texas Scholarship, 2002.
- University of Crete - Computer Science Dept., Best Student Award for the class of 2001.
- Greek Government Fellowship (IKY) for excellence in undergraduate studies: '98, '99, '00, 2001.

Invited Papers

- Paper invited to the International Journal of Robotics Research (IJRR), 2015.
 - Paper invited to the IEEE/RAS Robotics & Automation Magazine (RAM), 2015.
 - Paper invited to the International Journal of Robotics Research (IJRR), 2014.
 - Paper invited to the International Journal of Robotics Research (IJRR), 2012.
 - Paper invited to the ACM Journal on Mobile Networks and Applications (MONET), 2009.
 - Paper invited to the collection *Imaging Beyond the Pinhole Camera*, 2006.
 - Paper invited to ACM Journal on Mobile Networks and Applications (MONET), 2005.
 - Paper invited to Eleventh International Symposium of Robotics Research (ISRR), 2003.
 - Paper invited to the journal “Image Processing and Communications”, 2001.
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TEACHING

Rutgers University

Fall 2017	CS440	“Introduction to Artificial Intelligence” 100 students	Instructor
Spring 2017	CS440	“Introduction to Artificial Intelligence” 150 students	Instructor
Fall 2016	CS520	“Introduction to Artificial Intelligence” 88 students	Instructor
Fall 2015	CS598	“Topics in AI: Introduction to Manipulation” 25 students	New Course Development
Spring 2015	CS673	“CS Seminar: Manipulation Planning” 7 students	Instructor
Fall 2014	CS440/520	“Introduction to Artificial Intelligence” 79 students	Instructor
Spring 2014	CS344	“Design and Analysis of Computer Algorithms” 112 students	Instructor
Fall 2013	CS673	“CS Seminar: Computing Motion” 17 students	New Course Development
Spring 2013	CS344	“Design and Analysis of Computer Algorithms” 105 students	Updating Course Material

University of Nevada, Reno

Spring 2012	CS773	“Optimal Control and Reinforc. Learning”	New Course Development
Spring 2012	CS382	“Introduction to AI”	Instructor
Fall 2011	CS282	“Simulation Physics”	Instructor
Spring 2011	CS790E	“Planning Algorithms”	Instructor
Fall 2010	CS282	“Simulation Physics”	New Course Development
Fall 2010	CS793E	“Motion Planning Seminar”	Seminar Coordinator
Spring 2010	CS790E	“Planning Algorithms”	Instructor
Spring 2010	CS483/683	“Multi-Agent Systems”	Instructor
Fall 2009	CS482/682	“Artificial Intelligence”	Instructor
Spring 2009	CS790E	“Planning Algorithms”	New Course Development
Spring 2009	CS483/683	“Multi-Agent Systems”	New Course Development
Fall 2008	CS482/682	“Artificial Intelligence”	Updating Course Material

Rice University

Fall 2006	COMP450	“Algorithmic Robotics”	Instructor for 4 Lectures
Fall 2005	COMP450	“Algorithmic Robotics”	Instructor for 4 Lectures
Fall 2003	COMP482	“Design and Analysis of Algorithms”	Teaching Assistant
Spring 2003	COMP280	“The Mathematics of Computation”	Teaching Assistant
Fall 2002	COMP482	“Design and Analysis of Algorithms”	Teaching Assistant
Spring 2002	COMP280	“The Mathematics of Computation”	Teaching Assistant
Fall 2001	COMP482	“Design and Analysis of Algorithms”	Teaching Assistant

ACADEMIC ADVISING

Alumni of Research Group

- Doctoral students

- **Andrew Dobson** (Fall 2012 - Summer 2017) - A DHS fellow
PhD Thesis: “Compact Representations for Efficient Robot Motion Planning with Formal Guarantees”
Upon graduation joined the University of Michigan, Ann Arbor as a postdoc.
- **Thanasis Krontiris** (Fall 2012 - Summer 2017).
PhD Thesis: “Hierarchical Frameworks for Efficient Prehensile Rearrangement with a Robotic Manipulator”

Upon graduation joined the autonomous driving start-up “Auto X” in Palo Alto, CA.

○ Master of Science students

@ Rutgers - Thesis option

- **Min Zhao** (Psychology/CS - Co-advised with Prof. Eileen Kowler) (Fall 2013 - Summer 2014).
MS thesis: “Perceiving Legible Robotic Actions”
- **Aditya Chukka** (Fall 2015 - Spring 2017).
- **Colin Rennie** (Fall 2014 - Summer 2017).
MS thesis: “Designing & Learning CPG Gaits for Spherical Tensegrity Robots via Bayesian Optimization”

@ University of Nevada, Reno

- **James Marble** (Fall 2010 - Spring 2012).
McKenzie Engineering Foundation Scholarship
- **Ryan Luna** (Fall 2009 - Spring 2011).
MS thesis: “Efficient Multi-Robot Path Planning in Discrete Spaces”
Best MS Thesis award, Computer Science and Engin. department, UNR, 2011
- **Yanbo Li** (Spring 2009 - Spring 2011).
MS thesis: “Using Statistical Methods to Improve Sampling-based Motion Planning”
- **Ilias Apostolopoulos** (Fall 2009 - Spring 2011).
MS thesis: “Integrating Minimalistic Localization and Navigation for People with Visual Impairments”
1st place for GSA best paper award at UNR 2012.

On-going Graduate Thesis Supervision

○ Doctoral students

- **Zakary Littlefield** (Fall 2012 - today) - A NASA STR fellow.
- **Andrew Kimmel** (Fall 2012 - today).
- **Rahul Shome** (Fall 2013 - today).
- **Shaojun Zhu** (Fall 2014 - today). (co-advising with Abdeslam Boularias)
- **Chaitanya Mitash** (Fall 2015 - today). (co-advising with Abdeslam Boularias)
- **Rui Wang** (Fall 2017 - today).

○ Master of Science students

- **Chris Kourtev** (Fall 2015 - today).
- **Zacharias Psarakis** (Fall 2015 - today).

PhD Thesis Committee and Qualifying Exam Member

@ Rutgers University

- Yan Zhu (PhD) (committee chair: Dr. Dimitri Metaxas - defense, September 2017)
- Kaiyan Yu (PhD - Mechanical Engineering) (committee chair: Dr. Jingang Yi - defense, September 2017)
- Jingjin Liu (PhD) (committee chair: Dr. Dimitri Metaxas - defense, September 2017)
- Bo Liu (PhD) (committee chair: Dr. Dimitri Metaxas - qualifying exam, January 2017)
- Han Zhang (PhD) (committee chair: Dr. Dimitri Metaxas - qualifying exam, December 2016)
- Shu Wang (PhD) (committee chair: Dr. Dimitri Metaxas - qualifying exam, November 2016)
- Matthew Mitsui (PhD) (committee chair: Dr. Chirag Shah - qualifying exam, September 2016)
- Zhennan Yan (PhD) (committee chair: Dr. Dimitri Metaxas - defense, August 2016)
- Tarek El-Gaaly (PhD) (committee chair: Dr. Ahmed Elgaammal - defense, December 2015)
- Xiang Yu (PhD) (committee chair: Dr. Dimitri Metaxas - defense, September 2015)

- Yang Yu (PhD) (committee chair: Dr. Dimitri Metaxas - defense, August 2015)
- Turgay Senlet (PhD) (committee chair: Ahmed Elgamaal - defense, April 2015)
- Lin Zhong (PhD) (committee chair: Dr. Dimitri Metaxas - defense exam, February 2015)
- Mustafa Gokhan Uzunbas (PhD) (committee chair: Dr. Dimitri Metaxas - defense, December 2014)
- Brian McMahan (PhD) (committee chair: Dr. Matthew Stone - qualification exam, May 2014)
- Babak Saleh (PhD) (committee chair: Dr. Ahmed Elgamaal - qualification exam, April 2014)
- Mingchen Gao (PhD) (committee chair: Dr. Dimitri Metaxas - defense, April 2014)
- Peter Borosan (PhD) (committee chair: Dr. Andy Nealen - defense November 2013)
- Fei Yang (PhD) (committee chair: Dr. Dimitri Metaxas - defense September 2013)
- Ari Weinstein (PhD) (committee chair: Dr. Michael Littman - defense September 2013)

@ University of Nevada, Reno

- Apostolopoulos Ilias (Ph.D.) (committee chair: Dr. Eelke Folmer - defended November 2014).
- Tony Morelli (Ph.D.) (committee chair: Dr. Eelke Folmer - defended December 2011).
- Mark Oberberger (MS) (committee chair: Dr. Sushil Louis - defended Fall 2010).
- Rakhi Motwani (Ph.D.) (committee chair: Dr. Fred Harris - defended Spring 2010).
- Matthew Parker (MS) (committee chair: Dr. Bobby Bryant - defended Fall 2009).
- Navid Fallah (MS and PhD) (committee chair: Dr. Eelke Folmer - defended MS degree Fall 2009).

@ Other Institutions

- Oren Salzman (Ph.D.) (chair: Dr. Dan Halperin - Research Proposal, Nov. 2012 - Tel Aviv Univ., Israel).
- Devin Grady (MS) (committee chair: Dr. Lydia Kaviraki - defended January 2011 - Rice University).

Undergraduate Research Supervision

@ Rutgers University

- Nicholas Griego (Fall 2017 - today)
- Patrick Meng (Summer 2017 - today)
- Han Meng (Summer 2015 - Summer 2016) [Aresty Fellow and CCICADA researcher]
- Robert Gross (Summer 2014 - Summer 2016)
- Robert Kolchmeyer (Fall 2014 - Summer 2015) [Aresty Fellow]
Collaboration resulted in 1 conference publication with Robert as a first author.
- Andrew Wells (Summer 2015) [DIMACS REU Fellow - CUA student]
- Poorva Sampat (Summer 2014 - Summer 2015) [REU Fellow, CCICADA RA]
- Meera Murti (Summer 2014 - Summer 2015) [CCICADA RA]
- Ainesh Bakshi (Fall 2014 - Spring 2015) [Aresty Fellow]
- Gautam Venkatesan (Summer 2014) [Aresty Fellow]
- Priyesh Shah (Summer 2014)
- Grisam Shah (Summer 2014)
- Isaac Yochelson (Summer 2013 - May 2014) - Joined Lockheed Martin
Collaboration results in 1 conference publication.
- Ellyn Thwaite (Summer 2013 - May 2014)
- Joseph Jaeger (Summer 2013) - Joined the graduate program of UCSD.

@ University of Nevada, Reno

- Qandeel Sajid (Summer 2011 - Summer 2012) - 1 conference paper - Joined USC as graduate student.

- Jared Rhizor (Fall 2011 - Spring 2012) - Joined LiveRamp.
- Justin Cardoza (Fall 2011 - Spring 2012).
- Zakary Littlefield (Fall 2010 - Summer 2011). Joined lab on Fall of 2011 as a graduate student.
- Ethan Pang (Fall 2010 - Summer 2011). Joined Micron Technology, Inc. - Fall 2011.
- Andrew Dobson (Spring 2009-Spring 2010). Joined lab on Fall of 2010 as a graduate student.
- Alexis Oyama (Summer 2009-Spring 2010) - Collaboration resulted in 1 conference publication. Joined the MS program of the Entertainment Technology Center at Carnegie Mellon University

@ Rice University

- Max Glick (Summer 2005) - Collaboration resulted in 1 conference publication.
- Mert Akinc (Spring - Summer 2003) - Collaboration resulted in 1 conference publication.

Mentoring High-School Students

@ Rutgers University

- o Kunaal Chaudhari from the High Technology High School in Lincroft, NJ: "Robotics Internships for K-12 students in Computer Science" (Summer and Fall 2017).
- o Nikos Mouchtaris from Governor Livingston High School, NJ: "Remote Control of a Manipulator via a Virtual Reality Interface" (Summer 2015 & Summer 2016).
- o Alistair Kapadia (Summer 2016).
- o Alexander Yao (Summer 2016).
- o Jackson Meng from Peddie School in Hightstown, NJ: "3D Printing of a Robotic Hand" (Summer 2014).

Mentoring Senior Projects (Capstone)

@ University of Nevada, Reno

- o "Dynamic Collision Avoidance and 3D Localization of a Segway Robot"
Zak Littlefield, Ethan Pang, David Leblanc, Nathan Silva (Fall 2010 - Spring 2011)
- o "Object Tracking System using a Flying AR.Drone"
Jamie Hobel, Yael Campo, Nolan Warner, Tor Loken (Fall 2010 - Spring 2011)
- o "Automatic Recharging of a Flying Drone"
Kevin Chung, Vero Ramirez and Paul Olson (Fall 2010 - Spring 2011)
- o "Autonomous Error Detection and Intervention in Teleoperation of a Segway Robot - Part 2"
Mikaal Zaidi, David Orvis, Nathaniel Janca, Khai Duc Du (Fall 2009 - Spring 2010).
- o "Fire - S.A.F.E.: A Simulation Environment for the Evacuation of Buildings"
Alexis Oyama, Douglas Crossley, Alexander Fleiner (Fall 2009 - Spring 2010).
- o "Autonomous Error Detection and Intervention in Teleoperation of a Segway Robot"
Ryan Luna, Arthur LeVesque, Trevor Bullock (Fall 2008 - Spring 2009).

PROFESSIONAL SERVICE

Editorial Work for Academic Journals

- o Associate Editor of the IEEE flagship publication in robotics: IEEE Transactions on Robotics (RO) [Summer 2015 - Summer 2016]
- o Associate Editor for the IEEE Robotics and Automation Letters (RA-L) (Summer 2015 - Summer 2016).
- o Invited Editor for the International Journal of Robotics Research issue on WAFR 2016 (2017, with Prof. Lydia Kavraki of Rice University) - 12 articles.
- o Invited Editor for the IEEE Transactions on Automation Science issue on WAFR 2016 (2017, with Prof. Ron Alterovitz of Univ. of North Carolina, Chapel Hill) - 9 articles.

Conference Program Co-Chair

- Workshop on the Algorithmic Foundations on Robotics (WAFR), Berkeley, California, December 2016. (together with Prof. Ken Goldberg - UC Berkeley and Prof. Pieter Abbeel - UC Berkeley)
- Motion in Games Conference (MIG), Rennes, France, November 2012. (together with Prof. Marcello Kallmann - UC Merced)
<http://www.motioningames.org/>

IEEE Robotics and Automation Society Activities

- Member of the IEEE RAS Conference Activities Board [RAS financially sponsors approximately 10 conferences, co-sponsors 20 more, and technically sponsors 30 others. The Conference Activities Board provides overall oversight on conferences, including planning, logistics, and finances.]
- <http://www.ieee-ras.org/about-ras/governance/conference-activities-board>
- Co-chair of the IEEE Robotics and Automation Society Technical Committee on “Algorithms for Planning and Control of Robot Motion” (Fall '09 - Summer '15)
- <http://www.robotmotion.org/>

Conference Organizing Committee

- Area Chair for “Robotics: Science and Systems” (RSS) - <http://www.roboticsconference.org>:
 - Rome, Italy, July 2015.
 - Ann Arbor, MI, USA, June 2016.
 - Boston, MA, USA, June 2017.
- Workshops Co-chair for RSS, Berkeley, CA, USA, July 2014 (with Prof. Sertac Karaman - MIT).

Workshop/Symposia Co-chair

- Workshop on “Automation for Warehouse Logistics”
Collocated with the IEEE Intern. Conference on Automation Science and Engineering (CASE), 21 August 2016, Fort Worth, TX
(together with Dr. Alberto Rodriguez, MIT)
- Workshop on “Optimal Robot Motion Planning”
Collocated with the IEEE Intern. Conference on Robotics and Automation (ICRA), 26 May 2015, Seattle, WA
(together with Dr. Sidd Srinivasa, Carnegie Mellon University)
- Symposium related to the RSS 2015 Area Chair Meeting “Frontiers of Robotics”
Organized at the Rutgers University Inn, 27 March 2015, New Brunswick, NJ
(co-chaired with Prof. David Hsu, National University of Singapore)
- The “1st International Multiagent Pathfinding Workshop”
Collocated with the AAAI Conference on Artificial Intelligence (AAAI), 22 July 2012, Toronto, Ontario, Canada
(together with Dr. Nathan Sturtevant, U. of Denver and Dr. Ariel Felner, Ben Gurion University, Israel)
- Workshop on “Open Problems and Challenges of Motion Planning”
IEEE International Conference on Intelligent Robots and Systems (IROS), 30 Sept. 2011, San Francisco, CA
(together with Dr. Tim Bretl, UIUC and Prof. Dan Halperin, Tel-Aviv University, Israel)
- Symposium on the “Foundations and Prospects of Sampling-based Motion Planning”
Special Symposium celebrating the 50 years of Robotics Research
IEEE International Conference on Intelligent Robots and Systems (IROS), 27 Sept. 2011, San Francisco, CA
(Invited to organize - together with Prof. Steve LaValle, UIUC)
- Workshop on “Guaranteeing Motion Safety for Robots”
Robotics: Science and Systems (RSS), 27 June 2011, Los Angeles, California.
(together with Dr. Thierry Fraichard - INRIA, France and Dr. Jur van den Berg - UNC Chapel Hill)
- Workshop on “Motion Planning: From Theory to Practice”
Robotics: Science and Systems (RSS), 27 June 2010, Zaragoza, Spain
(together with Ron Alterovitz - UNC Chapel Hill, Juan Cortes - INRIA, France and Kris Hauser, U. of Indiana)
- Workshop on “Algorithmic Motion Planning for Autonomous Robots in Challenging Environments”

International Conference on Intelligent Robots and Systems (IROS), 29 Oct. 2007, San Diego
(together with Lydia Kavraki - Rice University and Manuela Veloso - CMU)

Conference Steering Committee

- Motion in Games Conference, Jan. 2013 - today
<http://www.motioningames.org/>

Associate Editor for Refereed Conferences

- Associate Editor: IEEE International Conference on Robotics and Automation (ICRA)
 - Seattle, WA, USA, May 26-30, ICRA 2015
 - Karlsruhe, Germany, May 6-10, ICRA 2013
 - Minneapolis, Minnesota, May 14-18, ICRA 2012
 - Shanghai, China, May 9-13, ICRA 2011
 - Anchorage, AK, USA, May 3-8, ICRA 2010
 - Kobe, Japan, May 12-17, ICRA 2009
- Associate Editor: IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)
 - Hamburg, Germany, September 28 - October 3, IROS 2015
 - Chicago, IL, USA, September 14-18, IROS 2014
 - Tokyo Big Sight, Japan, November 3-7, IROS 2013
 - Vilamoura, Algarve, Portugal, October 7-12, IROS 2012
 - San Francisco, CA, USA, September 25-30, IROS 2011

Program Committee Member

- Robotics-Science and Systems (RSS)
 - Berkeley, CA, USA, July 12-16, 10th RSS, 2014
 - Berlin, Germany, June 24-28, 9th RSS, 2013
 - Sydney, Australia, June 25-29, 8th RSS, 2012
 - Los Angeles, CA, USA, June 27-30, 7th RSS, 2011
- Workshop on the Algorithmic Foundations of Robotics (WAFR)
 - Istanbul, Turkey, August 3-5, 11th WAFR, 2014
 - Boston, MA, USA, 13-15 June, 10th WAFR, 2012
- The AAAI Conference on Artificial Intelligence (AAAI)
 - Austin, TX, USA, 29th AAAI, January 25-29 2015
 - Quebec City, Quebec, Canada, 28th AAAI, July 27-31 2014
 - Bellevue, Washington, USA, 27th AAAI, July 14-18 2013
 - Toronto, Ontario, Canada, 26th AAAI, July 22-26 2012
 - San Francisco, CA, USA, 25th AAAI (Physically-Grounded AI Track), August 7-11 2011
- Distributed Autonomous Robotic Systems (DARS)
 - London, UK, November 7-9 2016
- Symposium on Combinatorial Search (SoCS)
 - Ein Gedi, Dead Sea, Israel, 8th SoCS, June 11-13, 2015
 - Prague, Czech Republic, 7th SoCS, August 15-17, 2014
 - Seattle area, Washington, USA, 6th SoCS, July 11-13, 2013
- International Conference on Simulation, Modeling, and Programming for Autonomous Robots (SIMPAN)
 - Bergamo, Italy, 4th SIMPAN, October 20-23, 2014
- International Workshop on Software Cybernetics (IWSC)

- Seoul, Korea, July 19-20, 2010.
- o International Symposium on Visual Computing (ISVC)
 - Las Vegas, NV, Nov. 29 - Dec. 1, ISVC 2009
- o 6th Inter. Conference on Information Technology - New Generations (ITNG)
 - Las Vegas, NV, USA, April 27-29, 2009.

Proposal Review Panel

- o CAREER proposals in Robust Intelligence - CISE IIS Division - National Science Foundation (2 panels - multiple proposals)
- o CRII proposals in Robust Intelligence - CISE IIS Division - National Science Foundation (1 panel - multiple proposals)
- o Small proposals - Robust Intelligence Program - CISE IIS Division - National Science Foundation (2 panels - multiple proposals).
- o National Robotics Initiative - National Science Foundation (2 panels - multiple proposals).
- o Strategic Project Grants Program - Natural Sciences and Engineering Research Council of Canada (one proposal).
- o Discovery Grants Program - Natural Sciences and Engineering Research Council of Canada (one proposal).

Paper Review

- o Journals:
 - International Journal of Robotic Research (IJRR).
 - IEEE Transactions on Robotics (IEEE TR) / former Transactions on Robotics and Automation (IEEE TRA).
 - IEEE Robotics and Automation Society Magazine (IEEE RAS).
 - Autonomous Robots.
 - IEEE Transactions on Automation Science and Engineering (IEEE TASE).
 - Journal of Autonomous Agents and Multi-Agent Systems (J-AAMAS).
 - IEEE Transactions on Computational Intelligence and AI in Games (IEEE TCIAIG).
 - SIAM Journal on Control and Optimization (SICON).
 - IEEE Transactions on Mobile Computing (TMC).
 - IFToMM Mechanism and Machine Theory.
- o Conferences:
 - Workshop on the Algorithmic Foundations of Robotics (WAFR).
 - Robotics Science and System Conference (RSS).
 - IEEE International Conference on Robotics and Automation (ICRA).
 - IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS).
 - AAAI Conference on Artificial Intelligence (AAAI).
 - European Symposium on Algorithms (ESA).
 - Motion in Games conference (MIG).
 - Symposium on Combinatorial Search (STAIR).
 - IEEE Cybernetics and Intelligent Systems - Robotics, Automation and Mechatronics (CIS-RAM).

UNIVERSITY SERVICE

Committees @ Rutgers University

- CS Website Committee (from 2014 to 2018).
- CS MS Program Committee (2016-17).
- CS Hiring Committee (from 2013 to 2015, from 2017 to 2018).
- CS Colloquium Committee (from 2012 to 2015).
- CS MS Admissions Committee (2015-16).
- CS PhD Admissions Committee (2014 & 2018).
- CS Graduate Committee (2013-14).
- RU Strategic Planning Committee on “Understanding and creating a sustainable world through discovery, innovation, engineering, and technology” (Fall '13).

Committees @ University of Nevada, Reno

- CSE Graduate Recruitment, Evaluation and Curriculum Committee (Fall '08-Spring '09, Fall '10-Spring '12).
- CSE Undergraduate Curriculum Committee (Fall '08-Spring '12).
- CSE Faculty Evaluation Committee (For 2011 - Jan. 2012).
- CSE Colloquia Committee (Fall '09-Spring '12), which organized 49 colloquia during Sept. '09 - Nov. '11.
- CSE Facilities Committee (Fall '08 - Spring '10).

ABET Accreditation @ University of Nevada, Reno (2011)

- Prepared self-evaluation and ABET accreditation material for the following courses:
 - CS282 - “Simulation Physics”
 - CS482 - “Artificial Intelligence”
 - CS483 - “Multi-Agent Systems: Coordination Protocols and Game Theory”
- Prepared one chapter of the CSE department’s report for the 2011 ABET review.

TALKS & MEDIA

Academic Visits or Invited Talks

- November 2016: Invited robotics seminar at the Computer Science Department of Columbia University, NY, USA.
- July 2016: Invited Speaker in the NASA Tensegrity and Soft Robotics Technical Exchange 2016, Moffett Field, CA, USA.
- June 2016: Invited Speaker in the 2016 IEEE RAS Summer School on Multi-Robot Systems, National University of Singapore, Singapore.
- April 2016: Computer Science and Artificial Intelligence Laboratory (CSAIL), MIT, Boston, MA.
- April 2016: Computer Science, Northeastern University, Boston, MA.
- April 2016: Computer Science and Engineering, Texas A&M University, College Station, TX.
- March 2016: Johnson Space Center, Houston, TX.
- March 2016: Computer Science department, Rice University, Houston, TX.
- February 2016: UC Berkeley Laboratory for Automation Science and Engineering, Berkeley, CA.
- October 2015: Dagstuhl seminar on “Multi-Modal Manipulation under Uncertainty”, Dagstuhl, Germany.
- September 2015: Robotics and Biology Laboratory, Technical University of Berlin, Germany.
- September 2015: DroneBots Workshop, New Jersey Tech Council, Holmdel, NJ.
- June 2015: Computational Geometry Lab, Tel Aviv University, Israel.
- October 2014: GRASP lab, University of Pennsylvania, PA.

- January 2014: NASA Ames, Ames, CA.
- October 2013: NSF workshop “Robot Planning in the Real World: Research Challenges and Opportunities”, Washington, DC.
- April 2013: Department of Computer Science and Engineering, Lehigh University.
- November 2012: Mechanical Engineering & Mechanics department, Drexel University.
- November 2012: Perceptual Science Talk, Rutgers University.
- November 2012: Computational Geometry Lab, School of Computer Science, Tel Aviv University.
- June 2012: Willow Garage, CA.
- April 2012: Mobility and Robotic Systems Section, Jet Propulsion Laboratory (JPL).
- March 2012: Computer Science Department, Rutgers University.
- February 2012: Computer Science Department, University of Southern California.
- November 2011: NASA Ames, Ames, CA.
- April 2011: Electrical and Computer Engineering, University of Illinois, Chicago.
- April 2011: Department of Computer Science and Engineering, Washington University in St. Louis.
- April 2011: Electrical Engineering and Computer Science, University of California, Merced.
- March 2011: Computer Science Department, George Washington University.
- January 2011: Computer Science Department, Rice University.
- July 2010: Berkeley Automation Science Lab, University of California, Berkeley.
- April 2008: Department of Computer and Information Sciences, Fordham University, NY.
- March/April 2008: Computer Science and Engineering Department, University of Nevada, Reno.
- January 2008: Computer Science Department, Texas A&M University.
- April 2007: Computational Vision and Robotics Laboratory at ICS, FORTH, Crete, Greece.
- February 2007: A lecture of CS294 DARPA Grand Challenge, Computer Science, Stanford University.
- March 2005: Computer Science Department, Texas A&M University.
- January 2004: Computational Vision and Robotics Laboratory at ICS, FORTH, Crete, Greece.

In Conferences and Workshops

- September 2017: IEEE/RSJ IROS Workshop on “Development of Benchmarking Protocols for Robot Manipulation”, Vancouver, Canada.
- July 2017: NASA/ESA AHS Workshop on “Structurally Adaptive Tensegrity Robots”, CalTech campus, Pasadena, CA, USA.
- August 2016: IEEE Conference on Automation Science and Engineering (CASE, Fort Worth, TX, USA).
- August 2016: IEEE CASE Workshop on “Automation for Warehouse Logistics”, Fort Worth, TX, USA.
- July 2016: IJCAI Workshop on “Multi-Agent Path Finding”, New York City, NY, USA.
- June 2016: RSS Workshop on “Task and Motion Planning”, Ann Arbor, MI, USA.
- February 2016: Thirtieth AAAI Conference on Artificial Intelligence (AAAI-16), Phoenix, Arizona.
- September 2015: International Symposium on Robotics Research (ISRR), Sestri Levante, Italy.
- July 2015: RSS Workshop on “Principles of Multi-Robot Systems”, Rome, Italy.
- May 2015: New England Manipulation Symposium (NEMS), Northeastern University, Boston, MA.
- March 2015: Symposium on “Frontiers of Robotics” associated with the RSS 2015 Area Chair Meeting, New Brunswick, NJ.
- October 2014: International Conference on Simulation, Modeling, and Programming for Autonomous Robots (SIMPAN 2014), Bergamo, Italy.
- August 2014: Symposium on Combinatorial Search (poster highlight and poster), Prague, Czech Republic.
- June 2014: International Symposium on Experimental Robotics (poster highlight and poster), Marrakesh,

Morocco.

- May 2014: IEEE ICRA workshop on “Motion Planning for Industrial Robots”, Hong-Kong, China.
- May 2014: IEEE ICRA workshop on “On the centrality of decentralization in multi-robot systems: holy grail or false idol?”, Hong-Kong, China.
- May 2014: New England Manipulation Symposium (NEMS) - Columbia University, NYC, USA.
- August 2013: IEEE/NSF Workshop in Cloud Automation and Manufacturing - CASE, Madison, WI, USA.
- May 2013: Tutorial on Motion Planning for Mobile Manipulation - ICRA, Karlsruhe, Germany.
- May 2013: Workshop on Combining Task and Motion Planning - ICRA, Karlsruhe, Germany.
- November 2012: Simulation, Modeling and Programming for Autonomous Robots (SIMPAN), Tsukuba, Japan.
- July 2012: Workshop On Multi-Agent Pathfinding - AAMI, Toronto, CA.
- May 2012: IEEE International Conference on Robotics and Automation (ICRA) - Minneapolis, MN.
- Sept. 2011: Workshop on “Open Problems & Challenges of Motion Planning” - IROS 2011, San Francisco, CA.
- June 2011: Workshop on “Guaranteeing Motion Safety for Robots” - RSS, Los Angeles, CA.
- May 2011: IEEE International Conference on Robotics and Automation (ICRA) - Shanghai, China.
- March 2011: Southwest Workshop on Theory and Applications of Cyber-Physical Systems - Tucson, AZ.
- December 2010: Workshop on the Algorithmic Foundations of Robotics - WAFR, Singapore.
- June 2010: Workshop “Motion Planning: From Theory to Practice” - RSS, Zaragoza, Spain.
- May 2010: Guaranteeing Safe Navigation in Dynamic Environment (ICRA) - Anchorage, AK.
- July 2008: First Intl Symp. on Search Techniques in AI and Robotics (STAIR) - Chicago, IL.
- November 2007: Intern. Conference on Intelligent Robots and Systems (IROS) - San Diego, CA.
- Oct. 2007: Workshop on “Motion Planning in Challenging Environments” - IROS, San Diego, CA.
- Oct. 2007: First Intern. Conf. on Robot Communication and Coordination (ROBOCOMM) - Athens, Greece.
- April 2007: Workshop on “Collision-free Motion Planning for Dynamic Systems” - ICRA, Rome, Italy.
- April 2007: IEEE International Conference on Robotics and Automation (ICRA) - Rome, Italy.
- May 2006: IEEE International Conference on Robotics and Automation (ICRA) - Orlando, FL.
- April 2004: IEEE International Conference on Robotics and Automation (ICRA) - New Orleans, LA.
- September 2002: ACM Conference on Mobile Computing and Networking (MOBICOM) - Atlanta, GA.
- July 2001: Pan Hellenic Conference in Robotics and Automation (KTISIVIOS) - Santorini, Greece.

Research Highlighted in Media

- Bloomberg highlighting Rutgers participation at Amazon Picking Challenge '15: <http://bloom.bg/1d1UrLV>.
- Article: “Robot Sensing and Smartphones to Help Blind Navigate” by Helen Knight, New Scientist, May 2012.
- Article: “Smartphone app could help blind navigate indoors” by Devin Coldewey, MSNBC, May 2012.

OUTREACH

Demonstrations to the public visiting the campus

- *Rutgers Day*: 28 April 2017, 30 April 2016, 25 April 2015, 26 April 2014
- *UNR STEM Open House*: 18 November 2010

Visits by K-12 Students to the Lab

- Local K-12 outreach: 11 April 2017, 25 February 2016.
- Take your Child at Work (at CBIM - Coorganized with CCICADA/DIMACS) event: 24 April 2014, 25 April 2013.
- *Nevada Bound*: 3 December 2010, 29 January 2010, 20 February 2009

- 25 March 2011, Davidson Academy of Nevada

Visits to High-Schools

- 10 January 2014, New Milford High School, NJ & 3 November 2010, Davidson Academy of Nevada

Lectures for the Public

- DroneBots Workshop, New Jersey Tech Council, Holmdel, NJ, September 2015.
- Robotics Lecture Series (organizing and speaking) - Osher Lifelong Learning Institute - UNR: 16 October 2011 and 31 October 2011.

Judge at the Intel International Science & Engineering Fair (Intel ISEF)

- Reno, Nevada, May 10-16 2009.
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MENTORING TEAMS IN ROBOTIC COMPETITIONS

Amazon Picking Challenge

- Participation in the First APC, Seattle, WA, 2015 (<https://www.youtube.com/watch?v=kWrI4zCU5f4>)
 - 17 points and 7th place out of 28 participating teams and 40 registered
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ACADEMIC HOSTING

Host for Visiting Faculty

- Prof. Alberto Ferreira De Souza, Computer Science Department, Federal University of Espirito Santo, Brazil: September 2014 to August 2015
- Prof. Hao (Howard) Tang, Computer Science Department, Borough of Manhattan Community College, City University of New York: June to August 2015
- Prof. Victor M. Gonzalez, Department of Systems and Automation, University of Oviedo, Spain: Summer 2014

Host for Visiting Students

- Shan Yunxiao, Ph.D. candidate, Wuhan University - Scholar of the China Scholarship Council: September 2015 to August 2016.
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