

# Bibliography

- [1] Nancy M. Amato, O. Burchan Bayazit, Lucia K. Dale, Christopher Jones, and Daniel Vallejo. OBPRM: An obstacle-based PRM for 3D workspaces. In *Workshop on the Algorithmic Foundations of Robotics*, 1998.
- [2] Nancy M. Amato and Yan Wu. A randomized roadmap method for path and manipulation planning. In *Proceedings of the IEEE International Conference on Robotics and Automation*, pages 113–120, April 1998.
- [3] Ronald C. Arkin. Motor schema-based mobile robot navigation. *International Journal of Robotics Research*, August 1989, 8(4):92–112, 1989.
- [4] Anna Atramentov and Steven M. LaValle. Efficient nearest neighbor searching for motion planning. In *Proceedings of the IEEE International Conference on Robotics and Automation*, 2002.
- [5] David Ball and Gordon Wyeth. Multi-robot control in highly dynamic, competitive environments. In *7th International Workshop on RoboCup*, volume 7. Lecture Notes in Artificial Intelligence, Springer, 2003.
- [6] Kostas E. Bekris, Brian Y. Chen, Andrew M. Ladd, Erion Plaku, and Lydia E. Kavraki. Multiple query probabilistic roadmap planning using single query planning primitives. In *Proceedings of the IEEE Conference on Intelligent Robots and Systems (IROS)*, 2003.
- [7] Robert Bohlin and Lydia E. Kavraki. Path planning using lazy PRM. In *Proceedings of the IEEE International Conference on Robotics and Automation*, pages 521–528, 2000.
- [8] Robert Bohlin and Lydia E. Kavraki. A lazy probabilistic roadmap planner for single query path planning. *International Journal of Robotics Research*, 2002.
- [9] V. Boor, M. H. Overmars, and F. van der Stappen. The gaussian sampling strategy for probabilistic roadmap planners. In *Proceedings of the IEEE International Conference on Robotics and Automation*, 1999.

- [10] Michael Bowling, Brett Browning, and Manuela Veloso. Plays as effective multiagent plans enabling opponent-adaptive play selection. In *Proceedings of International Conference on Automated Planning and Scheduling (ICAPS'04)*, 2004.
- [11] Michael Bowling and Manuela Veloso. Motion control in dynamic multi-robot environments. In *International Symposium on Computational Intelligence in Robotics and Automation (CIRA'99)*, November 1999.
- [12] Oliver Brock and Oussama Khatib. High-speed navigation using the global dynamic window approach. In *Proceedings of the IEEE International Conference on Robotics and Automation*, 1999.
- [13] Carla E. Brodley and P. E. Utgoff. Multivariate decision trees. *Machine Learning*, 19(1):45–77, 1995.
- [14] R. A. Brooks. A robust layered control system for a mobile robot. *IEEE Journal of Robotics and Automation*, RA-2(1):14–23, 1986.
- [15] T. A. Brown and J. Koplowitz. The weighted nearest neighbor rule for class dependent sample sizes. *IEEE Transactions on Information Theory*, 25:617–619, 1979.
- [16] Brett Browning, James R. Bruce, Michael Bowling, and Manuela Veloso. STP: Skills tactics and plans for multi-robot control in adversarial environments. In *Journal of System and Control Engineering*, 2005.
- [17] James Bruce. CMVision realtime color vision system. The CORAL Group's Color Machine Vision Project. <http://www.cs.cmu.edu/~jbruce/cmvision/>.
- [18] James Bruce, Tucker Balch, and Manuela Veloso. Fast color image segmentation for interactive robots. In *Proceedings of the IEEE Conference on Intelligent Robots and Systems (IROS)*, Japan, 2000.
- [19] James Bruce, Michael Bowling, Brett Browning, and Manuela Veloso. Multi-robot team response to a multi-robot opponent team. *Proceedings of IROS 2002 Workshop on Cooperative Robotics*, 2002.
- [20] James Bruce and Manuela Veloso. Fast and accurate vision-based pattern detection and identification. In *Proceedings of the IEEE International Conference on Robotics and Automation*, Taiwan, May 2003.
- [21] James R. Bruce. Real-time robot motion planning in dynamic environments: Supplemental materials (<http://www.cs.cmu.edu/~jbruce/thesis/>).

- [22] James R. Bruce, Michael Bowling, Brett Browning, and Manuela Veloso. Multi-robot team response to a multi-robot opponent team. In *Proceedings of the IEEE International Conference on Robotics and Automation*, Taiwan, May 2003.
- [23] James R. Bruce and Manuela Veloso. Real-time randomized path planning for robot navigation. In *Proceedings of the IEEE Conference on Intelligent Robots and Systems (IROS)*, 2002.
- [24] James R. Bruce and Manuela Veloso. Safe multi-robot navigation within dynamics constraints. *Proceedings of the IEEE, Special Issue on Multi-Robot Systems*, 2006, to appear.
- [25] J. Chestnutt, J. J. Kuffner, K. Nishiwaki, and S. Kagami. Planning biped navigation strategies in complex environments. In *Proc. IEEE Int. Conf. on Humanoid Robotics*, October 2003.
- [26] Youngkwan Cho, Jongweon Lee, and Ulrich Neumann. Multi-ring color fiducial systems and a detection method for scalable fiducial tracking augmented reality. In *Proceedings of IEEE International Workshop on Augmented Reality*, November 1998.
- [27] Youngkwan Cho, Jun Park, and Ulrich Neumann. Fast color fiducial detection and dynamic workspace extension in video see-through self-tracking augmented reality. In *Proceedings of the Fifth Pacific Conference on Computer Graphics and Applications*, pages 168–166, October 1997.
- [28] Jonathan D. Cohen, Ming C. Lin, Dinesh Manocha, and Madhav Ponamgi. I-COLLIDE: an interactive and exact collision detection system for large-scale environments. In *Proceedings of the 1995 symposium on Interactive 3D graphics*. ACM Press New York, NY, USA, 1995.
- [29] A. D’Angelo, E. Menegatti, and E. Pagello. How a cooperative behavior can emerge from a robot team. In *Proceedings of the 7th International Symposium on Distributed Autonomous Robotic Systems*, 2004.
- [30] H. Edelsbrunner. A new approach to rectangle intersections: Part 1. *International Journal of Computation Mathematics*, 13(3):209–219, 1983.
- [31] H. Edelsbrunner. A new approach to rectangle intersections: Part 2. *International Journal of Computation Mathematics*, 13(3):221–229, 1983.
- [32] Michael Erdmann and Thomas Lozano-Perez. On multiple moving objects. *Algorithmica*, 2(4):477–521, 1987.

- [33] David Ferguson, Nidhi Kalra, and Anthony Stentz. Replanning with RRTs. In *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA)*, 2006.
- [34] David Ferguson and Anthony Stentz. Field D\*: An interpolation-based path planner and replanner. In *Proceedings of the International Symposium on Robotics Research (ISRR)*, 2005.
- [35] David Ferguson and Anthony Stentz. Using interpolation to improve path planning: The Field D\* algorithm. *Journal of Field Robotics*, 23(2):79–101, February 2006.
- [36] P. Fiorini and Z. Shiller. Motion planning in dynamic environments using the relative velocity paradigm. In *Proceedings of the IEEE International Conference on Robotics and Automation*, pages 560–565, May 1993.
- [37] P. Fiorini and Z. Shiller. Motion planning in dynamic environments using velocity obstacles. *International Journal of Robotics Research*, 17(7):760–772, July 1998.
- [38] Dieter Fox, Wolfram Burgard, and Sebastian Thrun. The dynamic window approach to collision avoidance. *IEEE Robotics and Automation Magazine*, 4, March 1997.
- [39] Henry Fuchs, Zvi M. Kedem, and Bruce F. Naylor. On visible surface generation by a priori tree structures. *ACM SIGGRAPH Computer Graphics*, 14(3):124–133, 1980.
- [40] M. Fujita and K. Kageyama. An open architecture for robot entertainment. In *Proceedings of the first international conference on Autonomous agents*, pages 435–442. ACM Press New York, NY, USA, 1997.
- [41] M. Fujita, Y. Kuroki, T. Ishida, and T. T. Doi. A small humanoid robot sdr-4x for entertainment applications. *IEEE/ASME International Conference on Advanced Intelligent Mechatronics (AIM)*, 2, 2003.
- [42] Masahiro Fujita, Y. Kuroki, T. Ishida, and T. Doi. A small humanoid robot sdr-4x for entertainment applications. In *Proc. of the Int. Conf. on Advanced Intelligent Mechatronics (AIM)*, 2003.
- [43] B. P. Gerkey and M. J. Mataric. A formal analysis and taxonomy of task allocation in multi-robot systems. *International Journal of Robotics Research*, 23(9):939–954, 2004.
- [44] Janne Heikkilä. Geometric camera calibration using circular control points. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 22:1066–1077, 2000.

- [45] Shinya Hibino, Yukiharu Kodama, Yasunori Nagasaka, Tomoichi Takahashi, Kazuhito Murakami, and Tadashi Naruse. Fast image processing and flexible path generation system for robocup small size league. In *Proceedings of the RoboCup-2002 Symposium*, 2002.
- [46] D. Hsu, R. Kindel, J.C. Latombe, and S. Rock. Randomized kinodynamic motion planning with moving obstacles. *International Journal of Robotics Research*, 21(3):233–255, 2002.
- [47] David Hsu, Tingting Jiang, John Reif, and Zheng Sun. The bridge test for sampling narrow passages with probabilistic roadmap planners. In *Proceedings of the IEEE International Conference on Robotics and Automation*, 2003.
- [48] David Hsu, J. C. Latombe, and R. Motwani. Path planning in expansive configuration spaces. In *Proceedings of The IEEE International Conference on Robotics and Automation (ICRA)*, volume 3, 1997.
- [49] Pekka Isto. Constructing probabilistic roadmaps with powerful local planning and path optimization. In *Proceedings of the IEEE Conference on Intelligent Robots and Systems (IROS)*, pages 2323–2328, 2002.
- [50] Ramesh Jain, Rangachar Kasturi, and Brian G. Schunck. *Machine Vision*. McGraw-Hill, 1995.
- [51] Jr. James J. Kuffner and Steven M. LaValle. RRT-Connect: An efficient approach to single-query path planning. In *Proceedings of the IEEE International Conference on Robotics and Automation*, 2000.
- [52] Tamás Kalmár-Nagy, Raffaello D’Andrea, and Pritam Ganguly. Near-optimal dynamic trajectory generation and control of an omnidirectional vehicle. *Robotics and Autonomous Systems*, 46(1):47–64, 2004.
- [53] Lydia E. Kavraki and Jean-Claude Latombe. Randomized preprocessing of configuration space for fast path planning. In *Proceedings of the IEEE International Conference on Robotics and Automation*, pages 2138–2145, 1994.
- [54] Lydia E. Kavraki, Petr Svestka, Jean-Claude Latombe, and Mark H. Overmars. Probabilistic roadmaps for path planning in high-dimensional configuration spaces. In *IEEE Transactions on Robotics and Automation*, volume 12, pages 566–580, 1996.
- [55] H. Kitano, M. Asada, Y. Kuniyoshi, I. Noda, and E. Osawa. Robocup: The robot world cup initiative. In *Proceedings of the IJCAI-95 Workshop on Entertainment and AI/ALife*, 1995.

- [56] D. E. Koditschek. Exact robot navigation by means of potential functions: Some topological considerations. In *Proceedings of the IEEE International Conference on Robotics and Automation*, pages 1–6, 1987.
- [57] Sven Koenig and Maxim Likhachev. Incremental A\*. *Advances in Neural Information Processing Systems (NIPS)*, 2002.
- [58] Y. Koren and J. Borenstein. Potential field methods and their inherent limitations for mobile robot navigation. In *Proceedings of the IEEE International Conference on Robotics and Automation*, pages 1398–1404, April 1991.
- [59] Andrew M. Ladd and Lydia E. Kavraki. Fast tree-based exploration of state space for robots with dynamics. In *Algorithmic Foundations of Robotics VI*, pages 297–312. Springer, STAR 17, 2005.
- [60] Andrew M. Ladd and Lydia E. Kavraki. Motion planning in the presence of drift, underactuation and discrete system changes. In *Robotics: Science and Systems I*, pages 233–241, Boston, MA, June 2005. MIT Press.
- [61] F. Large, Z. Shiller, S. Sekhavat, and C. Laugier. Towards real-time global motion planning in a dynamic environment using the nlvo concept. In *Proceedings of the IEEE Conference on Intelligent Robots and Systems (IROS)*, October 2002.
- [62] Jean-Claude Latombe. *Robot Motion Planning*. Kluwer, 1991.
- [63] T. Laue and T. Rofer. A behavior architecture for autonomous mobile robots based on potential fields. In *RoboCup 2004: Robot Soccer World Cup VIII*, volume 3276, pages 122–133. Lecture Notes in Artificial Intelligence, Springer, 2005.
- [64] Steven M. LaValle. Rapidly-exploring random trees: A new tool for path planning. In *Technical Report No. 98-11*, October 1998.
- [65] Steven M. LaValle and Jr. James J. Kuffner. Randomized kinodynamic planning. In *International Journal of Robotics Research*, Vol. 20, No. 5, pages 378–400, May 2001.
- [66] Tsai-Yen Li and Yang-Chuan Shie. An incremental learning approach to motion planning with roadmap management. In *Proceedings of the IEEE International Conference on Robotics and Automation*, volume 4, 2002.
- [67] Tsai-Yen Li and Yang-Chuan Shie. An incremental learning approach to motion planning with roadmap management. In *Proceedings of the IEEE International Conference on Robotics and Automation*, 2002.

- [68] M. Lin and S. Gottschalk. Collision detection between geometric models: A survey. In *Proc. of IMA Conference on Mathematics of Surfaces*, 1998.
- [69] T. Lozano-Perez and M. A. Wesley. An algorithm for planning collision-free paths among polyhedral obstacles. In *Communications of the ACM*, volume 22, pages 560–570, 1979.
- [70] Kazuhito Murakami, Shinkyu Hibino, Yukiharu Kodama, Tomoyuki Iida, Kyosuke Kato, and Tadachi Naruse. Cooperative soccer play by real small-size robots. In *Proceedings of the 2003 RoboCup Symposium*, 2003.
- [71] Bruce Naylor, John Amanatides, and William Thibault. Merging BSP trees yields polyhedral set operations. *ACM SIGGRAPH Computer Graphics*, 24(4):115–124, 1990.
- [72] N. J. Nilsson. *Principles of Artificial Intelligence*. Tioga Publishing Company, 1980.
- [73] J. M. Phillips, N. Bedrosian, and L. E. Kavraki. Guided expansive spaces trees: A search strategy for motion and cost-constrained state spaces. In *Proceedings of The IEEE International Conference on Robotics and Automation (ICRA)*, pages 3968–3973, New Orleans, LA, April 2004. IEEE Press.
- [74] Charles Poynton. Poynton’s color FAQ, 1997. <http://www.inforamp.net/poynton/ColorFAQ.htm>.
- [75] S. Quinlan and O. Khatib. Elastic Bands: Connecting Path Planning and Control. *Robotics and Automation, 1993. Proceedings., 1993 IEEE International Conference on*, pages 802–807, 1993.
- [76] J. H. Reif. Complexity of the mover’s problem and generalizations. In *Proc. of the 20th IEEE Symp. on Foundations of Computer Science*, pages 421–427, 1979.
- [77] Michael Sherback, Oliver Purwin, and Raffaello D’Andrea. Real-time motion planning and control in the 2005 cornell robocup system. *Robot Motion and Control*, 335(1):245–263, 2006.
- [78] Mark Simon, Sven Behnke, and Raul Rojas. Robust real time color tracking. In *Lecture Notes in Artificial Intelligence 2019, RoboCup 2000: Robot Soccer World Cup IV*, 2001.
- [79] RoboCup small-size Technical Committee. RoboCup F180 league 2006 rules (<http://www.cs.cmu.edu/brettb/robocup/rules/>).
- [80] Anthony Stentz. Optimal and efficient path planning for unknown and dynamic environments. In *International Journal of Robotics and Automation, Vol. 10, No. 3*, 1995.

- [81] P. Svestka and M. H. Overmars. Motion planning for car-like robots, a probabilistic learning approach. *International Journal of Robotics Research*, 8:119–143, 1997.
- [82] Robert E. Tarjan. *Data structures and network algorithms*. Society for Industrial and Applied Mathematics, Philadelphia, PA, 1983.
- [83] A. Tews and G. Wyeth. MAPS: A system for multi-agent coordination. *Advanced Robotics*, 2000.
- [84] R. B. Tilove. Local obstacle avoidance for mobile robots based on the method of artificial potentials. *General Motors Research Laboratories, Research Publication GMR-6650*, September 1989.
- [85] E. Uchibe, T. Kato, M. Asada, and K. Hosoda. Dynamic task assignment in a multi-agent/multitask environment based on module conflict resolution. In *Proceedings of the IEEE International Conference on Robotics and Automation*, pages 3987–3992, 2001.
- [86] Manuela Veloso, Michael Bowling, Sorin Achim, Kwun Han, and Peter Stone. The CMUnited-98 champion small robot team. In *RoboCup-98: Robot Soccer World Cup II*. Springer Verlag, 1999.
- [87] CW Warren. Multiple robot path coordination using artificial potential fields. *Robotics and Automation, 1990. Proceedings., 1990 IEEE International Conference on*, pages 500–505, 1990.
- [88] T. Weigel, J. S. Gutmann, M. Dietl, A. Kleiner, and B. Nebel. CS-Freiburg: Coordinating robots for successful soccer playing. *IEEE Transactions on Robotics and Automation*, 18:685–699, 2002.