

This document lists some candidate papers to be presented in the second half of the course. Each paper will be presented and discussed in one full class period. The expectation is that each student will take two turns as the presenter. Because there are more papers listed than presentation slots, some of these will be omitted.

If you would like to express preferences, please send the following information to your instructor via email by **noon on Monday, January 31**.

- An ordered list of which papers you would most like to present.
- A list of any class dates on which, for unavoidable reasons, you will not be able to attend the class.

Shortly after the deadline, your instructor will assign papers and presentation dates to satisfy as many of these constraints and preferences as reasonably possible. Note that the papers are listed in alphabetical order; the schedule will not follow this order.

- [1] Alphonsus Adu-Bredu, Nikhil Devraj, Pin-Han Lin, Zhen Zeng, and Odest Chadwicke Jenkins. Probabilistic inference in planning for partially observable long horizon problems. In *IEEE/RSJ International Conference on Intelligent Robots and Systems*, 2021.
- [2] Felipe Felix Arias, Brian Ichter, Aleksandra Faust, and Nancy M Amato. Avoidance critical probabilistic roadmaps for motion planning in dynamic environments. In *IEEE International Conference on Robotics and Automation (ICRA)*. IEEE, 2021.
- [3] Christopher Bradley, Adam Pacheck, Gregory Stein, Sebastian Castro, Hadas Kress-Gazit, and Nicholas Roy. Learning and planning for temporally extended tasks in unknown environments, 2021.
- [4] Chao Cao, Hongbiao Zhu, Howie Choset, and Ji Zhang. Tare: A hierarchical framework for efficiently exploring complex 3d environments. In *Robotics: Science and Systems*, 2021.
- [5] Michal Čáp, Jean Gregoire, and Emilio Frazzoli. Provably safe and deadlock-free execution of multi-robot plans under delaying disturbances. In *IEEE/RSJ International Conference on Intelligent Robots and Systems*, 2016.

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- [6] David C Conner, Hadas Kress-Gazit, Howie Choset, Alfred A Rizzi, and George J Pappas. Valet parking without a valet. In *IEEE/RSJ international conference on intelligent robots and systems*, 2007.
 - [7] Clemens Eppner, Sebastian Höfer, Rico Jonschkowski, Roberto Martín-Martín, Arne Sieverling, Vincent Wall, and Oliver Brock. Four aspects of building robotic systems: Lessons from the Amazon picking challenge 2015. *Autonomous Robots*, 42(7):1459–1475, 2018.
 - [8] Clemens Eppner, Roberto Martín-Martín, and Oliver Brock. Physics-based selection of informative actions for interactive perception. In *IEEE International Conference on Robotics and Automation*, 2018.
 - [9] Michael A Erdmann and Matthew T Mason. An exploration of sensorless manipulation. *IEEE Journal on Robotics and Automation*, 4(4):369–379, 1988.
 - [10] Sertac Karaman and Emilio Frazzoli. Incremental sampling-based algorithms for optimal motion planning. In *Proc. Robotics: Science and Systems*, 2010. [PDF].
 - [11] Zachary Kingston, Andrew M Wells, Mark Moll, and Lydia E Kavraki. Informing multi-modal planning with synergistic discrete leads. In *IEEE International Conference on Robotics and Automation*, 2020.
 - [12] Alan Kuntz, Mengyu Fu, and Ron Alterovitz. Planning high-quality motions for concentric tube robots in point clouds via parallel sampling and optimization. In *IEEE/RSJ International Conference on Intelligent Robots and Systems*, 2019.
 - [13] Steven M. LaValle and James J. Kuffner. *Rapidly-exploring random trees: Progress and prospects*, pages 293–308. A K Peters, Wellesley, MA, 2001.
 - [14] Hannah Lee, James Motes, Marco Morales, and Nancy M Amato. Parallel hierarchical composition conflict-based search for optimal multi-agent pathfinding. *IEEE Robotics and Automation Letters*, 6(4):7001–7008, 2021.
 - [15] Matthew T Mason. Kicking the sensing habit. *AI magazine*, 14(1):58–59, 1993.
 - [16] Andrew Messing and Seth Hutchinson. Forward chaining hierarchical partial-order planning. In *Algorithmic Foundations of Robotics XIV: Proceedings of the Fourteenth Workshop on the Algorithmic Foundations of Robotics*, pages 364–380. Springer International Publishing, 2021.
 - [17] Mark Moll, Constantinos Chamzas, Zachary Kingston, and Lydia E Kavraki. Hyperplan: A framework for motion planning algorithm selection and parameter optimization. In *IEEE/RSJ International Conference on Intelligent Robots and Systems*, 2021.
 - [18] Jason M. O’Kane and Steven M. LaValle. Almost-sensorless localization. In *IEEE International Conference on Robotics and Automation (ICRA)*, 2005.

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- [19] Előd Páll, Arne Sieverling, and Oliver Brock. Contingent contact-based motion planning. In *IEEE/RSJ International Conference on Intelligent Robots and Systems*, 2018.
- [20] Hazhar Rahmani, Dylan A. Shell, and Jason M. O’Kane. Planning to chronicle. In *Algorithmic Foundations of Robotics XIV: Proceedings of the Fourteenth Workshop on the Algorithmic Foundations of Robotics*. Springer International Publishing, 2021.
- [21] Nicholas Roy, Ingmar Posner, Tim Barfoot, Philippe Beaudoin, Yoshua Bengio, Jeanette Bohg, Oliver Brock, Isabelle Depatie, Dieter Fox, Dan Koditschek, Tomas Lozano-Perez, Vikash Mansinghka, Christopher Pal, Blake Richards, Dorsa Sadigh, Stefan Schaal, Gaurav Sukhatme, Denis Therien, Marc Toussaint, and Michiel Van de Panne. From machine learning to robotics: Challenges and opportunities for embodied intelligence, 2021. arXiv:2110.15245.
- [22] Basak Sakcak and Steven M. LaValle. Complete path planning that simultaneously optimizes length and clearance. In *IEEE International Conference on Robotics and Automation*, 2021.
- [23] Rahul Shome, Daniel Nakhimovich, and Kostas E Bekris. Pushing the boundaries of asymptotic optimality in integrated task and motion planning. 2021.
- [24] Tom Silver, Rohan Chitnis, Joshua Tenenbaum, Leslie Pack Kaelbling, and Tomás Lozano-Pérez. Learning symbolic operators for task and motion planning, 2021. arXiv:2103.00589.
- [25] Konstantin Slutsky, Dmitry Yershov, Tichakorn Wongpiromsarn, and Emilio Frazzoli. Hierarchical multiobjective shortest path problems. In *Algorithmic Foundations of Robotics XIV: Proceedings of the Fourteenth Workshop on the Algorithmic Foundations of Robotics*, pages 261–277. Springer International Publishing, 2021.
- [26] Yaron Veksler and Elon D Rimon. Evasive navigation of an autonomous mobile robot in hostile unknown environments. In *Algorithmic Foundations of Robotics XIV: Proceedings of the Fourteenth Workshop on the Algorithmic Foundations of Robotics*, pages 54–72. Springer International Publishing, 2021.
- [27] Marios Xanthidis, Nare Karapetyan, Hunter Damron, Sharmin Rahman, James Johnson, Allison O’Connell, Jason M. O’Kane, and Ioannis Rekleitis. Navigation in the presence of obstacles for an agile autonomous underwater vehicle. In *IEEE International Conference on Robotics and Automation*, 2020.