Sadra Sadraddini

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Professional Experience

Sony AI — Boston, MA
Staff AI Engineer — *Jan 2025 - Present*
Senior AI Engineer I — *Feb 2024 - Dec 2024*
Project Highlights:

Task And Motion Planning

Dexai Robotics, Inc. — Boston, MA
Principal Robotics Engineer — *Nov 2021 - Feb 2024*
Senior Robotics Engineer — *May 2021 - Nov 2021*

Massachusetts Institute of Technology (MIT) — Cambridge, MA
Robot Locomotion Group, Computer Science and Artificial Intelligence Laboratory (CSAIL)
Postdoctoral Research Associate (supervisor: Russ Tedrake) — *Feb 2018-May 2021*

Skills

Expertise	Dynamics and Control, Mathematical Optimization, Formal Methods, Computational Geometry
Programming	C++, Python, Matlab
Software Tools	Git, Docker, Drake, ROS, Gurobi, OMPL, OpenCV, Bazel

Education

Boston University — Boston, MA
PhD in Mechanical Engineering — *Jan 2018*
Dissertation Title: Formal Methods for Resilient Control (supervisor: Calin Belta)
MSc in Mechanical Engineering — *Sep 2017*

Sharif University of Technology — Tehran, Iran
BSc in Mechanical Engineering — *July 2013*
BSc in Aerospace Engineering — *July 2013*

Selected Publications

1. **Sadraddini. S** and Belta, C., 2018. Formal synthesis of control strategies for positive monotone systems. IEEE Transactions on Automatic Control, 64(2), pp.480-495.
2. **Sadraddini. S** and Belta, C., 2018, April. Formal guarantees in data-driven model identification and control synthesis. In Proceedings of the 21st International Conference on Hybrid Systems: Computation and Control (part of CPS Week) (pp. 147-156). **(Nominated for best paper award)**
3. **Sadraddini. S** and Belta, C., 2015, September. Robust temporal logic model predictive control. In 2015 53rd Annual Allerton Conference on Communication, Control, and Computing (Allerton) (pp. 772-779). IEEE.
4. **Sadraddini. S** and Tedrake, R., 2019, December. Linear encodings for polytope containment problems. In 2019 IEEE 58th Conference on Decision and Control (CDC) (pp. 4367-4372). IEEE.
5. Belta, C. and **Sadraddini. S**, 2019. Formal methods for control synthesis: An optimization perspective. Annual Review of Control, Robotics, and Autonomous Systems, 2, pp.115-140.
6. Wu, A., **Sadraddini. S** and Tedrake, R., 2020, May. R3T: Rapidly-exploring random reachable set tree for optimal kinodynamic planning of nonlinear hybrid systems. In 2020 IEEE International Conference on Robotics and Automation (ICRA) (pp. 4245-4251). IEEE.
7. Ghasemi, K., **Sadraddini. S** and Belta, C., 2020, April. Compositional synthesis via a convex parameterization of assume-guarantee contracts. In Proceedings of the 23rd International Conference on Hybrid Systems: Computation and Control (pp. 1-10). **(Nominated for best paper award)**

Selected Invited Talks

- Opportunities and Challenges in the Transition Between Research and Industry, RSS Workshop, New York, NY, 2022
- Polytopic Trees for Verification and Control of Dynamical Systems, Indiana University, Bloomington, IN, 2019
- Controlled Invariance for Uncertain Positive Monotone Systems, MTNS, Minneapolis, MN, 2016

Review Service

Reviewer for Journals: *Automatica, IEEE Transactions on Automatic Control, IEEE Transactions on Robotics, IEEE Robotics and Automation Letters, IEEE Transactions on Aerospace and Electronic Systems*
Reviewer for Conferences: *CDC, HSCC, ACC, ICRA, IROS, ICCPS, WAFR, RSS, NecSys*

References upon request. Last updated: April 2025