

Thomas Cohn

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Education

Massachusetts Institute of Technology

Ph.D. in Computer Science and Engineering

- Advisor: Russ Tedrake
- GPA 5.00/5.00

Cambridge, Massachusetts

Sep. 2022 - Present

S.M. in Electrical Engineering and Computer Science

- Advisor: Russ Tedrake
- Thesis Title: Motion Planning along Manifolds with Geodesic Convexity and Analytic Inverse Kinematics

Sep. 2022 - May 2024

University of Michigan

B.S.E. Computer Science and Engineering

B.S. Honors Mathematics

- Magna Cum Laude
- Engineering Honors Program
- Minors in Statistics and Music
- GPA 3.74/4.00

Ann Arbor, Michigan

Sep. 2017 - May 2022

Honors and Awards

- 2024 **Best Paper Award in Robot Manipulation Finalist**, ICRA
- 2023 **Best Paper Award Finalist**, RSS
- 2022 **Outstanding Undergraduate Research Award**, University of Michigan
- 2021 **1st Place Award**, University of Michigan Engineering Research Symposium

Publications

Conference Publications

- [C2] **Thomas Cohn**, Mark Petersen, Max Simchowitz, and Russ Tedrake. "Non-Euclidean Motion Planning with Graphs of Geodesically-Convex Sets". In: *Proceedings of Robotics: Science and Systems*. Daegu, Republic of Korea, 2023. **Best Paper Award Finalist**.
- [C1] **Thomas Cohn**, Nikhil Devraj, and Odest Chadwicke Jenkins. "Topologically-informed atlas learning". In: *2022 International Conference on Robotics and Automation (ICRA)*. IEEE. 2022, pp. 3598–3604.

Journal Publications

- [J1] **Thomas Cohn**, Odest Chadwicke Jenkins, Karthik Desingh, and Zhen Zeng. "TSBP: Tangent Space Belief Propagation for Manifold Learning". In: *IEEE Robotics and Automation Letters* 5.4 (2020), pp. 6694–6701.

Preprints

- [P1] **Thomas Cohn**, Seiji Shaw, Max Simchowitz, and Russ Tedrake. "Constrained Bimanual Planning with Analytic Inverse Kinematics". In: *arXiv preprint arXiv:2309.08770* (2023). **Accepted to ICRA 2024. Best Paper in Robot Manipulation Award Finalist**.

Presentations

- 2024 **Paper Presentation**, "Constrained Bimanual Planning with Analytic Inverse Kinematics"
ICRA 2024
- 2023 **Poster Presentation**, "Constrained Bimanual Planning with Analytic Inverse Kinematics"
Northeast Robotics Colloquium 2023
- 2023 **Paper Presentation**, "Non-Euclidean Motion Planning with Graphs of Geodesically-Convex Sets"
RSS 2023
- 2022 **Paper Presentation**, "Topologically-Informed Atlas Learning"
ICRA 2022
- 2021 **Poster Presentation**, "Topologically-Informed Atlas Learning"
University of Michigan Engineering Research Symposium – 1st Place Award
- 2021 **Poster Presentation**, "Coordinate Chart Particle Filter for Deformable Object Pose Estimation"
University of Michigan Engineering Research Symposium
- 2020 **Paper Presentation**, "TSBP: Tangent Space Belief Propagation for Manifold Learning"
IROS 2020
- 2019 **Poster Presentation**, "TSBP: Tangent Space Belief Propagation for Manifold Learning"
University of Michigan Engineering Research Symposium

Grants and Fellowships

- 2024 **Graduate Research Fellowship**, National Science Foundation
- 2022 **Frederick and Barbara Cronin Fellowship**, Massachusetts Institute of Technology
- 2020 **Raab Family Scholarship**, University of Michigan Marching Band
- 2019 **Wanda W. Lincoln Scholarship**, University of Michigan Marching Band
- 2017 **The Gloria Wille Bell and Carlos R. Bell Scholarship**
- 2017 **Regents Merit Scholarship**, University of Michigan

Teaching

- 2024 (Spring) **CSCI 5551: Introduction to Intelligent Robotic Systems**, [Guest Lecture](#) *University of Minnesota*
Faculty Instructor: Karthik Desingh
- 2023 (Fall) **6.4210: Robotic Manipulation**, Teaching Assistant *Massachusetts Institute of Technology*
Faculty Instructor: Russ Tedrake
- 2022 (Winter) **EECS 367: Introduction to Autonomous Robotics**, Teaching Assistant *University of Michigan*
Faculty Instructor: Chad Jenkins
- 2021 (Fall) **ROB 102: Introduction to AI and Programming**, Teaching Assistant *University of Michigan*
Faculty Instructor: Chad Jenkins
- 2020 (Winter) **ENGR 100-250: Microprocessors and Toys**, Teaching Assistant *University of Michigan*
Faculty Instructor: Peter Chen
- 2019 (Winter) **ENGR 100-250: Microprocessors and Toys**, Teaching Assistant *University of Michigan*
Faculty Instructor: Peter Chen

Work Experience

- 2022- **Graduate Student Research Assistant**, Massachusetts Institute of Technology, PI: [Russ Tedrake](#)
- 2016-2022 **Undergraduate Student Research Assistant**, University of Michigan, PI: [Chad Jenkins](#)
- 2021 **Curriculum Designer**, Robotics @ Marygrove
- 2017-2018 **Software Developer**, Number DNA

Extracurriculars

- 2022-Present **MIT Graduate Hillel**, President 2024-Present
- 2017-2022 **Michigan Marching Band**, Cymbal Section Leader 2019-2022
- 2017-2022 **Michigan Hockey Pep Band**
- 2018-2020 **Michigan Percussion Chamber Ensemble**