Thomas Cohn

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Education

Massachusetts Institute of Technology — *Cambridge, Massachusetts*

Ph.D. in Computer Science and Engineering — *Sep. 2022 - Present*

- Advisor: Russ Tedrake
- GPA 5.00/5.00

University of Michigan — *Ann Arbor, Michigan*

B.S.E. Computer Science and Engineering
B.S. Honors Mathematics — *Sep. 2017 - May 2022*

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

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

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 Engeineering Research Symposium

Teaching

2023 (Fall)	**6.4210: Robotic Manipulation,** Teaching Assistant	*Massachusetts Institute of Technology*
2022 (Winter)	**EECS 367: Introduction to Autonomous Robotics,** Teaching Assistant	*University of Michigan*
2021 (Fall)	**ROB 102: Introduction to AI and Programming,** Teaching Assistant	*University of Michigan*
2020 (Winter)	**ENGR 100-250: Microprocessors and Toys,** Teaching Assistant	*University of Michigan*
2019 (Winter)	**ENGR 100-250: Microprocessors and Toys,** Teaching Assistant	*University of Michigan*

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

2017-2022	**Michigan Marching Band,** Cymbal Section Leader 2019-2022
2017-2022	**Michigan Hockey Pep Band**
2018-2020	**Michigan Percussion Chamber Ensemble**