Tyler Han

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Education

- **University of Washington** *June 2022 - Present*
  Ph.D. Computer Science Advisor: Byron Boots
- **University of Maryland** *Sep 2018 - May 2022*
  B.S. Aerospace Engineering | *B.S. Computer Science* | *Minor: Mathematics* GPA: 3.9 / 4.0

Research Interest

Animals need only to observe a behavior a handful of times before imitating them through experience. However, current machine learning methods require orders of magnitude more data to imitate a demonstation. I am interested in methods which enable robots to attain the same level of efficiency and robustness as animals with an emphasis on real-world deployment.

Publications

1. Tyler Han, Preet Shah, Sidharth Rajagopal, Yanda Bao, Sanghun Jung, Sidharth Talia, Gabriel Guo, Bryan Xu, Bhaumik Mehta, Emma Romig, Rosario Scalise, Byron Boots. "Wheeled Lab: Modern Sim2Real for Low-Cost, Open-source Wheeled Robotics", *Conference on Robot Learning (CoRL)*, 2025. [pdf] [website]
2. Tyler Han, Alex Liu, Alex Spitzer, Guanya Shi, Byron Boots. "Model Predictive Control for Aggressive Driving Over Uneven Terrain", *Robotics: Science and Systems (RSS)*, 2024. [pdf] [website]
3. Chuning Zhu, Xinqi Wang, Tyler Han, Simon Du, Abhishek Gupta. "Transferable Reinforcement Learning via Generalized Occupancy Models", *Neural Information Processing Systems (NeurIPS)*, 2024. [pdf] [website]

Preprints

1. Tyler Han, Yanda Bao, Bhaumik Mehta, Gabriel Guo, Anubhav Vishwakarma, Emily Kang, Sanghun Jung, Rosario Scalise, Bryan Xu, Byron Boots. "Model Predictive Adversarial Imitation Learning for Planning from Observation", *arXiv*, 2025. [pdf]
2. Tyler Han, Sidharth Talia, Rohan Panicker, Preet Shah, Neel Jawale, Byron Boots. "Dynamics Models in the Aggressive Off-Road Driving Regime", *International Conference on Robotics and Automation (ICRA). Workshop on Off-Road Autonomy*, 2024. [pdf]

Honors and Awards

- **Runner-Up Best Paper** *September 2025*
  Resource-Rational Robot Learning Workshop, CoRL 2025
- **Graduate Research Fellowship Program (GRFP)** *March 2023*
  National Science Foundation

Media

- "National Robotics Week Latest Physical AI Research, Breakthroughs and Resources", NVIDIA, 2025

Projects

- **Robotic Autonomy in Complex Environments with Resiliency (RACER)** *June 2022 - Present*
  Defense Advanced Research Projects Agency (DARPA) [🌐]
  - Algorithmic and software development of control system for state-of-the-art unmanned ground vehicle (UGV)
  - Conduction of day and week long field tests for controls system and perception & planning integration
- **Autonomous Tunnel Boring** *Sep 2020 - May 2022*
  The Boring Company | *Not-a-Boring Competition*
  - Development of globalization, dynamics, and control system for autonomous tunnel boring (1 m diameter)
- **Deep Motor Primitives** *Aug 2020 - Dec 2021*
  Naval Research Laboratory
  - Develop algorithms for learning motor primitives using Dynamic Mode Decomposition and its derivatives
- **Manipulation for Satellite Servicing** *Jan 2019 - Aug 2020*
  UMD Space Systems Laboratory
  - Infrastructural and algorithmic software development for 8-DOF dexterous satellite servicing manipulator

Outreach & Mentoring

- **Robotics Research Mentoring** *June 2023 - Present*
  Robot Learning Lab
  - Master's Students: Anubhav Vishwakarma, Preet Shah → Now Research Engineer at General Robotics, Alex Liu → Now Software Engineer at Amazon (2024)
  - Undergraduate Students: Urvi Rutia, Bhaumik Mehta, Bryan Xu, Yanda Bao, Sidharth Rajagopal, Gabe Guo, Alyssa Giedd → Now Ph.D. Student at University of Washington (2024)
  - High School Students: Vansh Chhabra
- **Pre-Application Mentorship Program** *September 2022 - Present*
  University of Washington, Department of Computer Science & Engineering [🌐]
  - Mentor to students in under-represented or underserved communities considering graduate school