Tyler Han

+1-317-798-6397 | than123@cs.washington.edu | thanandnow.github.io

 LinkedIn | geiko246 | Google Scholar | TylerHan19

EDUCATION

• **University of Washington**
Ph.D. Computer Science

June 2022 - Present
Advisor: Byron Boots

• **University of Maryland**
B.S. Aerospace Engineering | B.S. Computer Science | Minor: Mathematics

Sep 2018 - May 2022
GPA: 3.9 / 4.0

RESEARCH INTEREST

I am broadly interested in **robotics, controls, and imitation learning**. Through targeting real systems, my research is inspired by human-level ability across classical robotics modules (e.g. perception, planning, controls).

PROJECTS

• **Imitation Learning for Off-Road Racing**
Robot Learning Lab

Sep 2023 - Present

  ◦ Developing end-to-end adversarial imitation learning methods for high-speed off-road racing using IsaacLab

• **Robotic Autonomy in Complex Environments with Resiliency (RACER)**
Defense Advanced Research Projects Agency (DARPA)

June 2022 - Present
[🌐]

  ◦ 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**
The Boring Company | Not-a-Boring Competition

Sep 2020 - May 2022

  ◦ Development of globalization, dynamics, and control system for autonomous tunnel boring (1 m diameter)

• **Deep Motor Primitives**
Naval Research Laboratory

Aug 2020 - Dec 2021

  ◦ Develop algorithms for learning motor primitives using Dynamic Mode Decomposition and its derivatives

• **Manipulation for Satellite Servicing**
UMD Space Systems Laboratory

Jan 2019 - Aug 2020

  ◦ Infrastructural and algorithmic software development for 8-DOF dexterous satellite servicing manipulator

PUBLICATIONS

1. 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]

2. 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]

IN PROGRESS & PREPRINTS

1. 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

• **Graduate Research Fellowship Program (GRFP)**
National Science Foundation

March 2023

OUTREACH

• **Robotics Research Mentoring**
Robot Learning Lab

June 2023 - Present

  ◦ Master's Students: Preet Shah, Alex Liu → Now Software Engineer at Amazon (2024)

  ◦ Undergraduate Students: Gabe Guo, Alyssa Giedd → Now Ph.D. Student at University of Washington (2024)

  ◦ High School Students: Vansh Chhabra

• **Pre-Application Mentorship Program**
University of Washington, Department of Computer Science & Engineering

September 2022 - Present
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  ◦ Mentor to students in under-represented or underserved communities considering graduate school