Tyler Han

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LinkedIn | geiko246 | Google Scholar | TylerHan19

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* 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** *Sep 2023 - Present*
  Robot Learning Lab
  ◦ Developing end-to-end adversarial imitation learning methods for high-speed off-road racing using IsaacLab
- **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

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)** *March 2023*
  National Science Foundation

Outreach

- **Robotics Research Mentoring** *June 2023 - Present*
  Robot Learning Lab
  ◦ 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** *September 2022 - Present*
  University of Washington, Department of Computer Science & Engineering [🌐]
  ◦ Mentor to students in under-represented or underserved communities considering graduate school