NATHAN T. HATCH

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EDUCATION

University of Washington, Seattle January 2020 - September 2021
M.S. in Computer Science & Engineering; Advisor: Dr. Byron Boots

Georgia Institute of Technology August 2017 - December 2019
Ph.D. student in Machine Learning; Advisor: Dr. Byron Boots

University of Chicago September 2010 - June 2014
B.S. in Mathematics and Computer Science with honors
National Merit Scholarship, University Scholarship, Dean's List 2010 - 2014

PUBLICATIONS

N. Hatch and B. Boots. "The Value of Planning for Infinite-Horizon Model Predictive Control." *2021 International Conference on Robotics and Automation (ICRA 2021).* https://arxiv.org/abs/2104.02863.

A. Shaban, C. Cheng, **N. Hatch**, and B. Boots. "Truncated Back-Propagation for Bilevel Optimization." *22nd International Conference on Artificial Intelligence and Statistics (AISTATS 2019).* http://proceedings.mlr.press/v89/shaban19a.html.

PROJECTS AND ACTIVITIES

High-speed off-road autonomous navigation June 2019 - present

- Conduct weekly field experiments for perception, planning, and control of a Clearpath Warthog robot (a.k.a. Argo J5 XTR) outfitted with cameras and an Ouster OS2 LIDAR sensor
- Handle physical and electrical hardware integration for new sensors
- Sped up the LIDAR processing pipeline to 10Hz to support 3m/s vehicle velocities

Husky Robotics Club, U. of Washington Seattle, WA
Software Subsystem Lead January 2020 - present

- Write software for teleoperation and autonomous control of a student-designed and -built Mars rover
- Recruit team members and delegate tasks to prepare for the University Rover Challenge
- Implemented a planar navigation simulator with A* search, and inverse kinematics for the rover arm

WORK EXPERIENCE

eSpark Learning Chicago, IL
Full-stack software engineer June 2014 - July 2017

- Led the annual iOS app release, removing 300ms tap delay and rewriting the video uploader
- Increased sales pipeline by 25% by integrating our product with Airwatch
- Conducted ∼20 interviews and code challenge reviews for recruiting

TECHNICAL STRENGTHS

Programming Languages	Python, C++, Javascript/HTML/CSS, Ruby
Robotics and Simulation Software	ROS, Gazebo, DART
Deep Learning Frameworks	PyTorch, TensorFlow