

# THOMAS HUCKELL



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North Vancouver BC

## OBJECTIVE

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Recent Masters graduate in Mechanical Engineering with a research focus on legged robotics. Seeking to build industry experience and apply my knowledge of modeling and control of dynamic systems to start my career in robotics.

## EDUCATION

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### Queen's University

Sept 2019 - May 2022

MASc in Mechanical and Materials Engineering

Thesis: "Standing Balance of Legged Robots: Leveraging Reduced Order Models to Improve Balancing Performance"

- Proposed balancing model for legged robots that extends existing models to include additional balancing strategies
- Utilized model predictive control (MPC) and trajectory optimization to compare push recovery performance of the proposed balancing model against existing models
- Validated implementation of the MPC on a one-legged robot in a push recovery simulation in Simulink Simscape Multibody

### Queen's University

Sept 2015 - April 2019

BASc in Mathematics and Engineering

- Dean's Scholar with First Class Honours
- Recipient of the R.H. Clark Applied Science Centennial Scholarship

## EXPERIENCE

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### Mechanical Engineering Manager

April 2017 - May 2019

Queen's Mostly Autonomous Sailboat Team

- Led and oversaw the mechanical team of 10+ undergraduate students with the design and development of a sailboat to compete in the International Robotic Sailing Regatta
- Designed and constructed molds from CAD parts to fabricate sailboat's components from composite materials

## AWARDS

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### RAIS 2021 Poster Competition

Oct 2021

- Winner of the robotics category with the poster "Improved Standing Balancing For Legged Robots With Unified Balancing Model"

### Dean's Teaching Assistant Award

June 2021

- Recognition of exemplary teaching during the 2020-2021 school year

## SKILLS

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Problem Solving ▪ Leadership ▪ Teamwork ▪ Project Management ▪ Communication

### Software

Fusion 360 ▪ Solid Works ▪ Simulink ▪ Microsoft Office ▪ Visual Studio Code

### Technical

Optimal control ▪ Linear control ▪ Modeling ▪ Simulation ▪ CAD

### Rapid Prototyping

3D printing ▪ Laser Cutting ▪ CNC ▪ Arduino

### Programming

MATLAB ▪ C++ ▪ Python ▪ ROS

## INTERESTS

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Kayak Guide and Instructor (Paddle Canada certified) ▪ Cycling ▪ Camping ▪ Golfing ▪ Woodworking