

# James Holden

University of New Hampshire - BS in Computer Science  
August 2014 - May 2018

Methuen, Massachusetts  
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Portfolio:  
[james-holden.github.io](http://james-holden.github.io)

## PROJECTS

### Rapidly Exploring Random Tree — *Algorithm Analysis*

- Analyzed various implementations of the Rapidly Exploring Random Tree (RRT) algorithm, which plans the motion of vehicles in non-discrete space
- Optimized solution quality for vehicles that require minimum turning radius (cars, boats, bicycles); Analyzed solution quality given set times to compute
- Formal report written in AAI format, available on my portfolio site

### Extraterrestrial Navigation Swarm (ET-NavSwarm) — *Robotics*

- Collaborated with multidisciplinary engineering to develop swarm of rovers with the ultimate goal of extraterrestrial exploration
- Programmed C++ for the rover's sensors (GPS, Motors, Infrared), Python for swarm behaviour
- Adapted project as a business proposal to win third p in the Holloway entrepreneurship competition

### A\* Visualizer — *Algorithm GUI*

- Developed GUI with Qt to visualize the A\* search algorithm as a path planner.
- Custom, user created environment
- Write up and demo available on my portfolio site

## WORK EXPERIENCE

### B Certification Project Manager — *Pali Institute*

August 2018 - March 2020

- Developed bid to certify Pali Institute as B Corporation
- Researched and proposed business practices to increase company impact
- Managed and supervised outdoor science instructors

### Business Manager — *New Hampshire Outing Club (NHOC)*

May 2016 - May 2017

- Managed all financial operations of the NHOC, funded 50,000 annually
- Crafted and implemented financial proposals for events and entire following fiscal year

## TECHNICAL SKILLS

- Python, PyQt
- C++, C
- HTML/CSS
- Git
- Linux

## COURSES TAKEN INCLUDE

- Artificial Intelligence
- Software Design
- Mobile Robotics
- Programming Language Concepts and Features
- Computer Science Theory
- Electrical Computer Engineering
- Big Data
- Technical Writing

## ADDITIONAL SKILLS

- Effective communication
- Adaptability
- Critical thinking
- Problem solving