Nick Walton

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Education:

BS. Candidate Computer Science Brigham Young University

- CGPA: 3.7 / 4.0
- Expected Graduation Date: December 2019
- C.S. Coursework Includes: **Deep Learning** (Graduate Level), Algorithms, Systems Programming
- Mech. Eng. Coursework Includes: Mechatronics, System Dynamics, Elements of Electrical Engineering

Skills:

Robotics: Deep Learning, Computer Vision, ROS, **OpenCV**, **PCL**
Programming: C/C++, Python, Java, **TensorFlow, Pytorch,** Unreal Engine
Tools: Git, Docker, Linux, Matlab
Other: Japanese, reading and conversationally fluent

Work Experience:

AI Research Assistant, BYU Perception, Cognition and Control Lab, April 2018 - Present

- Worked in team of four to develop “Holodeck”, an open source robotics simulator for machine learning with over 10,000 lines of code (https://holodeck.cs.byu.edu/)
- Optimized multi camera system in Holodeck increasing performance by 2X
- Enabled headless rendering for running Holodeck on dedicated GPU clusters

Autonomous Driving Eng. Intern, Autoliv Japan, Jun 2017 - Dec 2017

- Worked on development and testing of HIL system for robustly testing automotive camera and radar sensors on petabytes of raw sensor data
- Researched 3D computer vision methods and developed and got approved plan for using Lidar ground truth to save over $1 million per year in human labeling costs
- Developed software to analyze object detection algorithm performance over thousands of kilometers of vehicle driving data

Robotics Research Assistant, BYU RadLab, Sep 2016 - Jun 2017

- Researched and tested methods of high precision orientation tracking for estimating joint angles on inflatable robots
- Developed software using Python and C++ for sensor communication in ROS

Project Experience:

Autonomy Team Member, BYU Mars Rover, 2012-2013, 2018

- Developed a CNN based object recognition system that achieved 98% accuracy
- Designed and fabricated soil digging system that played key role in rover’s success
- Won 1st as a team in U.S. at international competition in series of robotics challenges

Simulated Self Driving Car, Personal Project, May 2017 - Sep 2017

- Developed a traffic sign classifier using CNNs in TensorFlow
- Trained a simulated self driving car, using behavioral cloning and CNNs, that was able to smoothly and safely navigate a complex environment
- Used computer vision techniques and OpenCV to robustly detect lane lines in a video stream