

NATHANIEL TODD

MASTER OF
SCIENCE
COMPUTER
SCIENCE STUDENT

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🔗 NathanielTodd

Skills

PROGRAMMING LANGUAGES

Python
C
C++
Matlab
Java
VHDL
Assembly

ENVIRONMENTS

ROS
Unix
Linux
Arduino
Windows

COURSEWORK

Machine Learning
Computer Vision
Algorithms
Algorithm Implementation
Formal Methods
Data Structures
Embedded Systems and
Microcontrollers
Systems Software
Signals and Systems
Analysis
Microelectronic Circuits
Digital Logic
Discrete Mathematical
Structures
Robotics Intelligence:
Planning
Computational Photography
Big Data Ethics
Deep Learning
Machine Learning Theory
High Performance Parallel
Computing

Education

GEORGIA INSTITUTE OF TECHNOLOGY Aug. 2018 to
Current
M.S. Computer Science 2020
Specialization: Machine Learning
Specialization: Perception and Robotics
GPA: 3.8

UNIVERSITY OF PITTSBURGH Aug. 2014 to
Apr. 2018
B.S. Electrical Engineering 2018
Minor: Computer Science
Concentration: Signals and Systems
GPA: 3.6 - Magna Cum Laude

Employment

Bloomfield Robotics

CV/ML Intern

Pittsburgh, PA
May 2019 to Current

- Applied GPU accelerated classical stereo vision
- Updated deep network architecture for object detection
- Fine-tuned existing networks with custom training data
- Implemented ROS systems on Nvidia TX2 and Xavier platforms

Georgia Institute of Technology

Graduate Teaching Assistant

Atlanta, GA
Jan. 2019 to May 2019

- CS 4731/7632 Game AI Course
- Graded Homeworks/Exams
- Addressed technical and administrative issues
- Held office hours to assist students with class topics

ABB Inc.

R&D Engineering Co-op

Oakmont, PA
Jan. 2017 to Dec. 2017

- Completed two co-op rotations, one in hardware design and one in software design
- Designed and prototyped TPS13 Turbine Protection System Board
- Used OrCAD Capture and Layout to produce necessary schematics and PCB layouts
- Programmed embedded software for TPS13 using C and VHDL
- Developed project overview document to assist future interns to understand the technical steps of board development

General Electric Power Conversion

EID Internship

Pittsburgh, PA
May 2016 to Aug. 2016

- Assisted in design and configuration of drive control software
- Collaborated with project engineers to complete motor drive installation and commissioning at test site
- Gained an understanding of the Services Team to complete a work instruction package
- Organized software summaries and documentation for New Product Introduction design reviews

Mow'n'Go

Owner

Greensburg, PA
Apr. 2013 to Aug. 2015

- 40+ hours per week, led 2 full time employees and other contracted employees
- Maintained between twenty and thirty lawns per week with Independent Landscaping
- Performed all mechanical maintenance and repairs

Projects

Camera Calibration and Fundamental Matrix Estimation with RANSAC

Oct. 2018 to Nov.
2018

- Developed a method for improving the local feature matching application.
- Calculated fundamental matrix to relate points along epipolar lines and eliminate feature matches not satisfying the epipolar line relation.

Local feature Matching Application

Sept. 2018 to Oct. 2018

- Created local feature matching algorithm by recreating a version of Harris' Corner detector, a SIFT descriptor, and a feature matching function.

Senior Design Interactive Surface Localization System

May 2017 to Aug. 2018

- Designed low cost IR tracking system that can turn any display/surface into an interactive workspace