

CARTER J. SCHULTZ

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EDUCATION

University of Wyoming, Laramie, WY

Bachelors of Science in Mechanical Engineering

GPA 3.75/4

Spring 2015

EXPERIENCE

AMP Robotics

Lead Robotics Engineer

2016 - 2018

Louisville, CO

- Developed custom stereo vision filters and grasp optimization for improved pick reliability
- Integrated ROS to multiple industrial robots with custom interfaces in native controller languages
- Oversaw testing and deployment of regular software updates to a fleet of robotic systems deployed around the world

SpaceX

Launch Automation Engineer

2015 - 2016

Los Angeles, CA

- Upgraded tooling for automated rocket processing and recovery operations
- Developed vision system for autonomous alignment of rocket and ground equipment
- Created probabilistic collision models for automated crane operations
- Designed and fabricated custom sensor packages to survive launch environment

Neya Systems

Robotics Intern

Summers 2013 - 14

Pittsburgh, PA

- Developed ROS interfaces for autonomous operation of micro-UAVs
- Created OpenCV based object tracking software for automated surveillance
- Implemented mission behaviors and autonomous capabilities for mobile robots
- Designed and manufactured custom components for robotic platforms

EPSCoR Program

Undergraduate Fellow

2012 - 2014

Laramie, WY

- Developed microcontroller driven graphics system for high resolution LCD
- Created microcontroller compatible algorithms for robotic navigation
- Designed distributed computation system for microcontroller networks

Square One Systems Design

Systems Programmer

Summers 2010 - 12

Jackson, WY

- Solved complex kinematic and positions planning problems on six-DOF parallel robots
- Programmed natural and adaptive human interfaces for robotic control in NI-Labview
- Implemented autonomous functionality for mobile platforms including: path-planning, obstacle detection, mapping, and error recovery
- Developed cataloging and database systems for product quality assurance

RELEVANT SKILLS

Mechanical

- Machining: Mill, Lathe, CNC
- 3D Modeling: Solidworks, NX, Inventor, Blender, OnShape
- FEA: Femap, Abaqus, ANSYS
- Mechanical Tolerances with GD&T

Electrical

- Microcontroller Debugging
- Electronics Soldering and Assembly
- Signal Capture and Analysis
- Electronic Design for Robotic Systems

Software

- Development with Linux and Windows
- Robotic Algorithms: Path-Planning, Point Cloud Analysis, Kinematic Modeling, Probabilistic Data Filtering, Machine Vision, and Grip Analysis
- Proficiency With: Git, CMake, Boost, ROS, OpenCV, and Qt

PROGRAMMING LANGUAGES

C++/C

Experience: 6 years
Proficiency: Expert

Java

Experience: 3 years
Proficiency: Intermediate

Labview

Proficiency: Expert
Experience: 5 years

Mathematica

Experience: 2 years
Proficiency: Intermediate

Matlab

Experience: 3 years
Proficiency: Intermediate

Python

Experience: 2 years
Proficiency: Novice

HONORS AWARDS

University of Wyoming Trustees Full Scholarship
Dean's List of Distinguished Students: Fall 2011 - Spring 2012
Tau Beta Pi Outstanding Freshman Award
Kinser Jazz Festival Outstanding Musicianship Award