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Professional Profile

A **Robotics Engineer** with a background in mechanical engineering and over a year of professional and academic experience with **ROS**. I have experience with full-cycle design, integration, and testing for **platform development** for maritime, aerial, and ground vehicles. I have also taken **multiple leadership roles** in teams ranging from 4 to 100 student and professional members along with experience with project management, product development, sponsorship, and website development.

Education

Master's and Bachelor's of Science in Mechanical Engineering

Drexel University, Pennoni Honors College | Anticipated Graduation: June 2018

Undergraduate GPA: 3.94 | Graduate GPA: 3.95 | *Focus in Controls & Systems*

Engineering Work Experience

Lockheed Martin Robotics and Intelligent Systems Group – Robotics Engineer

Cherry Hill, New Jersey | March 2017 to September 2017 | *Advanced Technologies Lab*

- Robotic platform developer for unmanned maritime and aerial vehicles
- Performed full system design, development, and integration
- Developed vehicle software and controls in ROS framework

Autonomous Systems Laboratory – Robotics and Development Engineer

Zürich, Switzerland | March 2016 to September 2016 | *Swiss Fed. Inst. of Tech. (ETHZ)*

- Interfaced ABB YuMi with MoveIt! software in ROS C++ to automate kinematic and dynamic model and to integrate existing algorithms for path planning and controls
- Integrated the Leap Motion and VI sensor with YuMi for interactive manipulation
- Developed a stand and a new attachment for YuMi to integrate a VI sensor
- Presented work to the President of ABB Switzerland and his colleagues

Production Technology West – Research Engineer

Trollhättan, Sweden | September 2014 to March 2015 | *University West*

- Developed algorithms to determine robustness of weld defect detection from an IR camera with various light sources
- Built a GUI in MATLAB to interface with algorithms to display defect locations to user
- Developed tests to image defects on welds using an IR camera with various light sources in order to benchmark the defect detection algorithms
- Designed and built a borescope for an IR camera to image welds inside of vanes

Engineering and Leadership Experience

Drexel Hyperloop Team – Project Manager, Sponsorship Head, Steering Committee

Drexel University | June 2015 to Present

- Interfaced between subsystems as project manager to develop project schedule, deadlines, and manage team resources to keep the project on track for competition
- Interfaced between university advisors, university staff, and sponsors
- Developed organizational structure, grew team of 5 to over 100 students
- Raised over \$65,000 as sponsorship head for developing a scaled pod prototype

Micromouse Competition – Small mobile robotics maze competition

Drexel University | June 2016 to Present

- Working with a mechanical and computer engineer along with a professor in mechanical engineering to develop a fully custom robot and controls system to autonomously move the robot through a maze for a grand prize of \$2,000
- Developed the simulation of the robot in a maze in MATLAB as a visualization tool for testing mapping and maze solving algorithms for further optimization of algorithms

THOR Mobile Robot – Three Omni-Wheeled Robot

Drexel University | March 2015 to September 2015

- Developed controller for three omni-wheeled robot using an Arduino
- Used PID, interrupts, SMA, remote radio, and sensor feedback

Skills

Robotics

ROS (Robot Operating System)
ABB Industrial Robots
Embedded Systems
Software Development
Full-Cycle Design/Integration/Testing
System Architecture Design

Programming

MATLAB
HTML/CSS
C++
Python
JavaScript
RAPID
Bash
LaTeX

Software

ProE/Creo
SolidWorks
Microsoft Office

Manufacturing

3D Printing
Auto Lathe
Milling
Power and Hand Tools

Electrical

Soldering
Wiring (crimping, layouts, etc.)

Languages

French (Working Proficiency)

Standards and Practices

Programming

Google C++ Style Guide
ROS C++ Style Guide

Non-required Coursework

Graduate

Probability & Random Variables
Programming Foundations

Undergraduate

Micro-Based Control Systems
Numerical Analysis I
Computer Programming I
Basic Robotic Simulation