Andrew Masters

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Senior Mechanical Engineering student at the University of New Hampshire with over 4 years of Automotive and Aerial Robotics R&D experience. I am seeking internships and full-time control systems engineering positions in the automotive and aerospace industries.

**Experience**

**Research Assistant - Aerial Swarm Robotics Jun 2018 – Present (>1 Yr.)**

*University of New Hampshire*

* Utilizing quadrotor UAV platforms for adaptive controller development, swarm optimization applications, and satellite dynamics and control studies.
* Currently developing MIMO, Adaptive Nonlinear Model Predictive Position Controller in dual loop with Nonlinear Sliding Mode Attitude Controller

**Visiting Research Assistant - Aerial Swarm Robotics Jan 2018 – Feb 2018 (1 Mo.)**

*University of Melbourne*

* Developed MATLAB classes for managing quadrotor swarm information and facilitating communication between ROS and Vicon motion capture servers
* Built and validated 7 quadrotors for coordinated, multi-vehicle flights
* Parametrized and implemented highly dynamic multi-vehicle flight paths on a 5 multirotor test platform

**Computer Vision and Control Software Intern Jun 2018 – Jul 2018 (2 Mo.)**

*DEKA Research and Development*

* Developed a computer vision algorithm and experimental testing rig capable of sensing micro-liter pump actuations of various working fluids.
* Designed and conducted experiments to verify the performance of a model-based controller for an innovative medical device.

**Powertrain Control Software Intern/Research Assistant Jun 2017 - Jan 2018 (8 Mo.)**

*Mercedes-Benz R&D NA/Technische Universität Darmstadt*

* Developed driving simulator control algorithms (Model Predictive Control and Classical Washout)
* Coordinated a subject test to study the effects of drivetrain lash and gasoline powertrain oscillation on passenger experience in autonomous driving scenarios.
* Applied driving simulator research results to control software in conventional V6, V8 and V12 gasoline engines and mild-hybrid I6 gasoline engines.

**Chief Vehicle Controls Engineer Aug 2016 - May 2017 (10 Mo.)**

*UNH Precision Racing (FSAE)*

* Lead a multi-disciplinary team of 5 undergraduates through the design, manufacturing, and testing stages of our vehicle’s control systems.

**Service Engineering Intern Dec 2015 - Sep 2016 (>1 Yr. Tot.)**

*Mercedes-Benz USA Engineering Services*

* Supported several large data mining projects pertaining to customer issue management and improved time to issue resolution.

**Education**

**B.S, Mechanical Engineering****Aug 2015 – May 2020**

*University of New Hampshire* GPA: **3.71/4.0**

**Skills**

**Programing and Software**

Extensive experience using MATLAB, Simulink, C++, Python, SolidWorks (CSWA Certified), Excel and VBA Macros. Experience using ROS, OpenCV, Mastercam, AutoCAD Autodesk and Inventor, ETAS INCA, PowerPoint, and Word.

**Other**

Extensive machine shop and welding experience, electronics and sensor development/debugging, practiced leader of technical/research groups of up to 100 people. Fluent English, working proficiency in German, novice Spanish.