

Sean P. Murray

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Education:

North Carolina State University

Graduation Date: Spring 2021

- Bachelor of Science in Aerospace Engineering
- GPA: 3.84
- Mechanical and Aerospace Engineering Scholarship Recipient

Work Experience:

SpaceX, Launch Vehicle Subassembly Production Intern

Summer 2019

- Supported production of Falcon 9 subassemblies through tooling design, manufacturing planning, and qualification testing
- Designed and implemented dimensional verification tooling, reducing related issue tickets by 86% and saving ~\$20,000/year
- Derived slider-crank mechanical system for technician time reduction project with a projected \$85,000/year impact
- Revamped weld temperature monitoring process for significantly increased inspection fidelity
- Performed qualification testing campaign to raise acceptance criteria and improve first pass yield

NC State Supersonic Wind Tunnel, Undergraduate Research Assistant

Summer 2018 – Present

- Experimentally investigated elementary shockwave boundary layer interactions and scramjet/ramjet inlet unstart physics using pressure sensitive paint, pressure transducers, and various flow visualization techniques
- Developed in-house high frequency pressure sensitive paint for first blow-down type supersonic wind tunnel application
- Upgraded existing nitrogen mass injection system by increasing working pressure from 100 to 600 psig
- Processed data, created figures, and wrote experimental set-up section of a journal paper to be published in early 2020

BMW Manufacturing, Device Engineering Co-Op

Fall/Spring 2018

- Collaborated with a small, fast-paced team to build, maintain, and document electronic error prevention devices that reduce assembly costs by minimizing defects and vehicle rework time
- Designed, manufactured and implemented specialty, one-off, error prevention solutions for high priority defect causing issues
- Researched feasibility of new technologies such as programmable controllers, light curtains, and camera systems
- Piloted a log file data analysis and query system project aimed at exposing trends in part variant display system faults
- Led project to communicate department capabilities to the plant through an intranet page, solutions catalog, and newsletter

NC State Aerospace Summer Camp, Counselor

Summer 2017

- Spread enthusiasm for Aerospace Engineering to high schoolers through conceptual lectures followed by complimentary design challenges including model rocket, glider, and bridge competitions

Projects:

Arduino Model Rocket Flight Computer, Individual Project

Summer/Fall 2018

- Developed a data-logging flight computer prototype built around an Arduino Uno, pressure sensor, and SD card reader
- Programmed computer to measure pressure, calculate relative altitude and velocity, and write data to a SD card

Mazda Miata Project Car, Individual Project

Summer 2015 – Spring 2019

- Transformed high mileage, poor condition, and low-cost Mazda Miata into a reliable and presentable vehicle
- Replaced clutch, brakes, suspension, master cylinder, and performed bodywork, paint, and other maintenance

3D Printing Design Competition, Team Lead

Fall 2016

- Designed and fabricated a multi-tool, highlighting a swappable tool system, using Solidworks and Additive Manufacturing
- Facilitated productive discussions during meetings, delegated work to team members, and ensured project deadlines were met

Technical Skills:

MATLAB	Lean Manufacturing	3D Printing
NX/Teamcenter	Root Cause Analysis	Automotive Repair
Solidworks	Process Planning/Improvement	Machining/Fabrication

Relevant Courses:

Aerospace Structures I	Intro to Aerospace Engineering	Probability and Statistics
Dynamics and Controls	Engineering Statics	Intro to Graphics - Solidworks
Aerospace Vehicle Performance	Engineering Problem Solving	Intro to Computing – MATLAB