

Charlie Nitschelm

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Objective: Find an internship or full-time manufacturing engineering position starting the summer of 2020

Education: **University of New Hampshire – College of Engineering and Physical Sciences** **Aug. 2016 – May 2020, anticipated**
GPA: **3.79/4.0** | Honors Program | B.S, Mechanical Engineering | Minor in Physics

Tech Skills: Solidworks | MATLAB | VSM | GD&T | DMLS Printing | 5 Axis Machining | Tig and Laser Welding | Water Jet

Experience: **Rocket Lab USA** **May 2019 – August 2019**

Propulsion Manufacturing Engineering Intern

- Lead the production of the factories first in-depth value stream map to help identify process bottlenecks to be fixed
- Designed and created a company-wide production tracking worksheet to predict production sub-group rates, and the affect projects will have on the rate looking forward, helping steer attention to the biggest impactors
- Designed, drawn and manufactured a 7 different tools and fixtures that cut set-up and 5-axis CNC operations on the line by a total of 32 total hours per flight
- Operated the DMLS printers when called upon to assist with set-up and takedown, as well as assist in the engineering build files to find creative ways to cut print time on the machines.
- Assisted in the set-up, installation and initial qualification of 3D printed parts coming from a new 400x400x400 machine.

TURBOCAM International

September 2018 – May 2019

Manufacturing Engineering Intern

- Created and optimized 5-axis mill tool paths using batch with feeds, speeds, approaches and retracts
- Used a Zoller Smile to precisely obtain tool measurement readings after an operation
- Conducted an analysis on tool degradation with different tool coatings for Inconel 718 to determine if the extended tool life would outweigh the costs of tool coating implementation to the factory floor

National Institute of Standards and Technology (NIST)

May 2018 – August 2018

Researcher: Mechanical Performance

- Conducted a study on Inconel 625 in both tension and compression and stress triaxiality on axisymmetric 1018 steel
- Performed low strain rate tests on an MTS and compiled all the data using Python to output useful information
- Designed and performed all experiments on a pulse-heated Split Hopkinson (Kolsky) Bar for high strain rates

UNH Mechanical Engineering

January 2018 – May 2018

Undergraduate Researcher

- Designed and modeled axisymmetric 1018 steel specimens using Solidworks and Abaqus to study stress triaxiality
- Manufactured 30 Inconel 625 specimens in various rolling directions to study the effects of heating rates

UNH Institute for the Study of Earth, Oceans, and Space

May 2017 – August 2017

Researcher: Data Analysis

- Used Python to conduct a systematic search of the COMPTEL satellite data for evidence of polarization
 - Performed simulations to estimate the polarization sensitivity for that event
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Relevant Orgs: **UNH Students for the Exploration and Development of Space**

Mar. 2017 – present

Co-Founder, CTO

- Managing the Hybrid Rocket program to design, manufacture and build a gimbal-controlled hybrid engine using HTPB and Nitrous Oxide and integrate it into a 7" single stage rocket
 - Attended SpaceVision 2018 with 16 team members in San Diego, California to network with other SEDS members
 - Lead overall managerial duties including running all meetings and overseeing the goals of the organization
 - Created an in-depth flight simulation using MATLAB to optimize our rocket's design to achieve maximum height
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Other Skills: Project Management | Organizational Leadership | Creativity and Problem-Solving | Process Improvement