

Charlie Nitschelm

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Objective:	Find an internship or research position pertaining to aerospace engineering for the summer of 2019	
Education:	University of New Hampshire – College of Engineering and Physical Sciences GPA: 3.81/4.0 Honors Program B.S, Mechanical Engineering Physics Minor	Aug. 2016 – May 2020, anticipated
Tech Skills:	Solidworks Python MATLAB VSM GD&T Machining Welding Autodesk Fusion 360 CNC Milling Water Jet	
Experience:	TURBOCAM International <i>Manufacturing Engineering Intern</i> <ul style="list-style-type: none">• Creating and optimizing 5-axis mill tool paths using batch with feeds, speeds, approaches and retracts• Using a Zoller Smile to precisely obtain tool measurement readings after an operation• Conducting 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	September 2018 – present
	National Institute of Standards and Technology (NIST) <i>Researcher: Mechanical Performance</i> <ul style="list-style-type: none">• 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• Designed and performed all experiments on a pulse-heated Split Hopkinson (Kolsky) Bar for high strain rates• Compiled all recorded data on experiments and used Python to perform calculations to output useful information	May 2018 – August 2018
	UNH Mechanical Engineering <i>Undergraduate Researcher</i> <ul style="list-style-type: none">• 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• Ensured that the timeline of work would end so testing could occur at NIST during the summer of 2018	January 2018 – May 2018
	UNH Institute for the Study of Earth, Oceans, and Space <i>Researcher: Data Analysis</i> <ul style="list-style-type: none">• Used Python to conduct a systematic search of the COMPTEL data for evidence of polarization from solar flares• Organized necessary data sets and developed tools that will be needed for analysis• Using the COMPTEL field-of-view, determined the number of source and background counts for each solar flare• Performed simulations to estimate the polarization sensitivity for that event• Created a systematic analysis of all gamma ray bursts that took place within the COMPTEL field-of-view	May 2017 – August 2017
Relevant Orgs:	UNH Students for the Exploration and Development of Space <i>Co-Founder, CTO</i> <ul style="list-style-type: none">• Managing the Hybrid Rocket program to design, manufacture and build a gimbal-controlled hybrid engine using HTPB and Nitrous Oxide• 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• Head the model rocketry building techniques program to master the manufacturing expertise needed• Managed all tech leads to create a high-altitude rocket to participate in the University Student Rocketry Competition• Created an in-depth flight simulation using MATLAB to optimize our rocket's design to achieve maximum height	Mar. 2017 – present
Other Skills:	Project Management Organizational Leadership Creativity and Problem-Solving Communication	

Space and Engineering Portfolio

UNH Students for the Exploration and Development of Space (SEDS) 2017-2018 Rocket Compilation Video:

During the beginning of our first year as an engineering organization, we had no idea how to build a rocket. We spent the year learning rocket building techniques and optimizing our flight simulation software using MATLAB. The video below is the culmination of our work to finally reach a successful multi-stage launch in preparation for the University Student Rocketry Competition in the Fall of 2018.

<https://www.youtube.com/watch?v=l3QVM1bIW8>

UNH SEDS University Student Rocketry Competition Launch – September 29th

The culmination of our entire organization led us to this launch video below. Although it did not go perfectly, the failures we experienced were calculated risks that needed to be taken to compete. Rocketry is a noble pursuit. It is the truest profession in which failure directly leads to success. It can become discouraging that failure has been experienced more than success, but it has only pushed us more to prove that we are capable of achieving greatness. We would like to thank SEDS for organizing this competition as it has guided us to finally become rocketeers.

<https://www.youtube.com/watch?v=qhKtFAfzMnM>

Propeller, CO2 and Rocket Powered Baby Crib Car Video:

Over the summer of 2018 in Washinton DC, I took many classes at The Foundry in Baltimore, Maryland on welding, machine shop skills, 3 axis CNC milling, and waterjet. The culmination of this work (and some weekend free time) lead me to make this project linked below with a friend I made there, James Arnold.

<https://www.youtube.com/watch?v=nGd9a4myZ-8&t=9s>

Xploration Station's 2018 Student Astronaut Video:

My submission to Xploration Station to become the 2018 Student Astronaut. With so many amazing aerospace museums in the DC area over the 2018 summer, I needed to take advantage of it!

<https://www.facebook.com/xplorationstation/posts/1939978696069183>