



# NICHOLAS ACUÑA

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## EDUCATION

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**Carnegie Mellon University, Pittsburgh, PA**

Master of Science in Mechanical Engineering

Bachelor of Science in Mechanical Engineering, Minor in Robotics

**Overall GPA: 3.78 / 4.00**

*May 2023*

*Dec 2022*

## WORK EXPERIENCE

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**The Boeing Company - St. Louis, MO**

Phantomworks Industrial Engineering Intern

May 2022 - August 2022

*40 hrs/week*

- Drafted work instructions for proprietary Advanced Weapons project alongside a senior manufacturing engineer.
- Created a 5-year strategy for Phantom Works Production Engineering facilities via allocating space for new capital equipment, qualifying rooms for production of advanced material systems, and optimizing floor designs.

**The Robotics Institute (CMU) - Pittsburgh, PA**

Mechanical Lead Engineer for Iris Lunar Rover

January 2019 - December 2021

*20-80 hrs/week*

- Lead team of 7-15 undergraduate and graduate interns in developing a lunar rover that will launch in early 2022.
- **Design** - Contributed significantly to all rover subsystems used in flight model and 4 engineering models.
- **Structures** - Performed hand analyses and used a FE model to perform verification and write final structures report.
- **Composites** - Lead design efforts for all composite structures. Developed tool geometry, ply schedule, and infusion techniques for the innovative and published CFRP "Bottlecap Wheels".
- **Testing** - Developed plans for and performed static load, vibroacoustic, thermal vacuum, and mobility testing. Generated data analysis on the above tests and helped write test reports.
- **Technical Drafting** - Created and reviewed engineering drawings using ASME Y14 drafting standards.
- **QC** - Developed assembly, composite fab, and inspection procedures using ASME, NASA, and CMH-17 standards.

## PROJECTS

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- **Robot Simulator** - Wrote a MATLAB simulator to create and control the kinematics of a generalized robot arm.
- **Custom Vice** - Designed a new vice for people disabled with Cerebral Palsy via a telescoping and revolving handle.

## TECHNICAL SKILLS & COURSEWORK

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**Eng. Tools**

Solidworks, Siemens NX, AutoCAD, Teamcenter, ANSYS Mechanical, Simulink

**Languages**

C, C++, Python, VBA

**General**

Microsoft Office, Jira, Ubuntu, Git, ROS, Photoshop

**Relevant Courses**

Adv. Mobile Robot Dev., Dynamic Systems & Controls, Feedback Control Systems

Robot Kinematics, Applied FEA, Stress Analysis, Fluid Mechanics, Heat Transfer

Thermal Design, ME Project Management, Operations Management, Computer Systems

## ACCOLADES & INTERESTS

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"College student aims for the moon" - Grid News, 3/15/21 ([Link](#))

"Composites design helps ... rover hit big milestones" - CompositesWorld 1/18/21 ([Web Link](#)) ([Magazine Link](#))

Boeing Scholarship, Hispanic Scholarship Fund, and Perryman Family Foundation Award Winner

Dean's List CMU College of Engineering 2018-2022

Rowing (Varsity Captain) ♦ Road Cycling ♦ Wrestling ♦ Chess ♦ Guitar