Jared **Holland**

Sylva, North Carolina 28779

About me

A results-driven engineering professional with a strong foundation in Mechanical Engineering and a keen interest in the advancement of technology, seeking to leverage my years of hands-on industry experience and my educational background to contribute to the NASA Langley Research Center.

Areas of specialization

3D CAD Software • CFD Simulation • FEA Analysis • Python • MATLAB/Octave • 3D Printing Technology • Mechanical Drawings • CNC Machining

Soft Skills

Teamwork Oriented • Strong Communicator • Leadership • Organized

Interests

Blacksmithing, 3D printing, Robotics, CNC Machining, Hiking, Plants, Guitar

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Employment History

2023–2024

Leidos: Power Distribution
Power Distribution Engineer · Asheville, NC

- Developed power pole layouts in collaboration with Duke Energy, demonstrating expertise in **engineering design principles** and **adherence to industry standards**.
- Managed bill of materials to ensure the **reliability** and **efficiency** of distribution circuits, contributing to the seamless operation of the North Carolina power distribution system.
- Utilized **Maximo** to facilitate effective communication and coordination of permitting efforts and vital design information, optimizing construction processes for field personnel and minimizing project delays.
- Performed field survey work to inspect and gather data on each power pole assigned to the Leidos Asheville office so that the engineering team had sufficient data to start their designs.
- Leveraged **ArcGIS** to generate preliminary designs, proactively identifying and addressing potential environmental, structural, and permitting challenges before initiating the formal design processes.

2022–2023

TekTone: Sound & Signal
Mechanical Engineering Intern · Franklin, NC

- Led the mechanical design for two anti-vandal nurse call stations, overseeing the entire life cycle from conceptualization to successful product launch. **Gantt Project** was utilized for efficient project management during this assignment. It assisted in properly allocating team resources and ensuring timely achievement of project milestones.
- Spearheaded the usage of 3D printing technology for use in the development of high-quality 3D printable test fixtures to enhance production processes, collaborating closely with production floor workers and machine shop personnel to ensure design accuracy and manufacturability. Implemented **ASME standards** and best practices in mechanical drawings, demonstrating a commitment to quality and precision engineering.
- Introduced and implemented 3D printing technology that aided in producing corrective parts, resulting in cost savings. This experience show cases engineering **problem solving** skills.
- Conducted research projects using the **scientific method** that involved root cause analysis among other optimization studies. These projects used software tools such as **R Studio**, **Python**, and **MATLAB/Octave** to produce high-quality graphs and figures that were then organized in LaTeX for presentation to management and interested parties.

2019–2022

TekTone: Sound & Signal
Manufacturing Engineering Intern · Franklin, NC

- Worked with other technicians to run various parts of the automation line to ensure we met the production quota. This fostered a culture among the automated assembly line workers of **inclusiveness**, **excellence**, and **teamwork**. We viewed our fellow workers' success as our own success.
- Trained to operate **Panasonic pick n place machines**, **Automated Optical Inspection equipment**, and **SPEA 4080** high-production flying probe tester.
- Developed Python script modules for KiCAD circuit board design software, enabling seamless communication between engineering and production teams. These modules generated usable files for the **Panasonic automation line** and the **SPEA 4080**, **improving design efficiency** and **reducing errors in manufacturing**.
- Demonstrated initiative and dedication, progressing from an electronics assembly worker to a Manufacturing Engineering Intern within a short period, showcasing adaptability and a strong work ethic.

Education

2019–2023

Bachelors In Mechanical Engineering - 3.460 GPA
Western Carolina University · Cullowhee, NC

CubeSat Capstone Project
fall and spring senior semesters

- Hand picked by the WCU rapid center staff for my demonstrated knowledge and competence in heat transfer analysis and structural design.
- Led a multidisciplinary team in the development of a CubeSat Capstone Project, serving as a bridge between **mechanical engineering concepts** and **aerospace design practices**.
- Conducted extensive preliminary research in **CubeSat operational systems**. We took the necessary time to evaluate CubeSat flight system hardware devices such as **boosters**, **reaction wheels**, **magnetorquers**, **Inertial Measurement Units**, and **Startracker** amongst some of the systems and processes that we reviewed. Once the direction was defined by the sponsors we could make better decisions on what **aerospace flight hardware** the CubeSat was required to meet. This contributed to the successful completion of milestones within our allocated time frame without wasting our budget.
- Utilized programming skills in VS Code to **support electrical engineering team members** with logic board programming and **conducted design audits of circuit boards** assessing **system performance**, **layout configuration**, **operational limits**, **reliability**, and **manufacturability** using KiCAD circuit board design software.
- Oversaw the design and fabrication of the mechanical frame, ensuring compliance with project requirements and specifications provided by **ISO17770**.
- Facilitated communication with sponsors and engineering mentors, providing regular updates on firmware, mechanical design, and fabrication progress. This communication was pivotal in guiding project direction so that our team met sponsor objectives.

Academic Achievements

- Dean's List recognition for outstanding academic performance.
- Graduated with a minor in math.

Technical Skills Acquired

- Proficiency in **Finite Element Analysis (FEA)** for gantries and steel structures in both **CREO parametric** and **Ansys**.
- Advanced proficiency in 3D modeling and assembly using Creo Parametric and Autodesk Inventor.
- Foundational understanding of **Computational Fluid Dynamics (CFD)** analysis using **Ansys software**.
- Hands-on experience in **waterjet cutting** production process.
- Conducted an independent study with Tektone: Sound & Signal to determine the thermal loads on there nurse call system hardware. This required extensive use of **MATLAB** and **FLIR** devices that were included in **my analytical models of the system** and **testing methods**.
- Assisted in repair and troubleshooting within the 3D print lab.

2015–2019

Associates in Science - 3.387 GPA
Southwestern Community College · Sylva, NC

- Developed proficiency in **3D printer design and modification**, culminating in the construction of a customized 3D printer from scratch.
- Applied knowledge in hobby electronics and utilized **KiCAD** for electronics design projects.
- Acquired practical skills in metalworking and blacksmithing, including basic practices for **MIG** and **ARC** welding techniques.
- Gained proficiency in programming languages including **C++**, **C#**, **Python**, **Arduino**, and **G-code**, enabling customization of custom 3D printer firmware.
- Developed strong foundations in 3D CAD software such as **FreeCAD**, **Autodesk Inventor**, and **Blender**, utilizing these skills to design and produce 3D printable products that funded workshop upgrades and materials.

Software Experience and Technical Skills

Python	LaTeX	CREO Parametric	KiCAD
FreeCAD	CREO: FEA analysis	ANSYS	ANSYS: Fluent
R Studio	Octave	MATLAB	C++
(FDM) 3D Printing	Maximo	Water Jet Cutting	Product Development
Mechanical Drawings	VS Code	3 Axis CNC Machining	Circuit Board Manufacturing

Certificates

June 2023 6 Axis Robotic Arms: ASME
Jan 2023-Feb 2023 Water Jet Cutting: Western Carolina University
June 2024 OnShape: Detailed Drawings

References

Leidos| Hank Seaman (Distribution Mentor):	980-253-5045
Tektone| Kim Hammaker (VP manufacturing):	828-371-4654
WCU| Wes Stone (Director of Engineering + Technology):	wstone@email.wcu.edu, 828-227-2181
WCU| Enrique Gomez (CubeSat Project Sponsor):	egomez@email.wcu.edu, 828-227-2718
WCU| Scott Rowe (Fluid Dynamics Professor):	srowe@email.wcu.edu, 314-601-4836