

RODERICK LANDRETH

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EDUCATION AND CERTIFICATIONS

- **Union College**, Schenectady, NY 2016 - 2020
 - Honors Bachelor of Science in Mechanical Engineering, Minor in Physics. **GPA: 3.71**
- **CSWP Certified** • Active TS clearance and CAC • Eagle Scout

TECHNICAL SKILLS

- Proficient with SolidWorks CAD/Simulation, Python, MATLAB, Simulink, L^AT_EX, 3D printing, CURA, Idea Maker, and Simplify3D Slicers, Microsoft 365 Suite(Including Power BI and Visio)
- Experience with Fusion 360 CAD, GD&T, JMP Data Analysis, Microcontrollers, KiCAD PCB design, Java, C#, Mathematica, Jira, Ubuntu, CentOS 8, Bash Scripting, VMware,

WORK EXPERIENCE

Mechanical Engineer II

JUN 2020 - Present

at *Sherpa 6 Inc.*

Natick, MA and San Francisco, CA

- Lead design engineer modeling, fabricating and documenting a carried, ruggedized air-cooled edge-processing and networking enclosure with 3 switching power sources.
- Lead engineer for experimental design, testing, and data analysis comparing multiple force sensor's data output and programmatically calculating/verifying jump height and other statistics. Produced a research paper.
- Produced a ruggedized leave-behind tactical radio enclosure, 80+ hours operation time, manufactured 20 used in a tropical rain forest enabling network communications for several events.
- Designed and modeled ruggedized modular payload system for integrating networking architecture, batteries, chargers, and UAV onto in-field terrain-worn robotics. Learned KiCad PCB design and fabricated electronics.
- Prototyped 3D-printed and electronic parts for field use in PLA Pro +, PETG and Nylon.
- Served as point of contact for 3D printing, mechanical design and modeling amongst Sherpa 6 and collaborators.
- Developed software in Python for command line and simulation tools, integrated with third-party software.
- Travel 25% of the year learning network engineering to enable and troubleshoot large integration events.
- Collaborating with Army Makers Space to design solution prototypes and provide consultation.
- Documentation including network diagrams, white papers, system SOP's and event SitReps to VIPs.
- Researched physiological status models to implement and test against raw data from networked sensors.

Engineering Intern

JUN - AUG 2019

at *Greno Industries*

Scotia, NY

- Modeled parts contracted for production using SolidWorks, designed engineering drawings incorporating GD&T.
- Optimized the procedures used by manufacturing and quality control to validate fabricated parts.

IT Technician Intern

JUL - SEP 2018

at *TwinHats*

Hopkinton, MA

- Learned WinCAP CAD Software to create pathing programs for clients CNC Machines.
- Installed domain controllers and applied active directory, updated 2008/12/16 Windows server architecture.
- Developed assembly line streamlining software with visual C#.
- Negotiated clearly with clients to troubleshoot and solve IT and logistics issues.

RELEVANT PROJECTS

Union College SAE Aero Competition Team

2016-2020

- Finished in third place overall (first place among domestic teams) in the international SAE competition.
- Designed a plane able to assemble from a fixed volume in under 3 minutes maximizing payload.
- Judged by professional engineers based on design report, presentation, assembly time, and flight success.
- No aeronautics courses offered, learned from independent research, simulation and experimental testing.
- Organized meetings, set deadlines, and lead build sessions to teach concepts and manufacturing techniques.
- Senior Project Design Lead SEP 2017 - JUN 2018
 - 10ft plane with static and dropped payloads, releasing autonomous gliders landing on target.
 - Managed a budget of \$30,000, communicated with donors including college admins, alumni and companies.
 - Dimensioned, calculated static and dynamic stability and chose materials to fulfill given design objectives.

Personal Projects

- Modeling and fabrication of primarily 3D printed snap-together Twin-engine differential thrust RC plane.
- Produced a script to dimension a plane based off desired wingspan, wing/tail configurations, and payload.
- Modeling and printing iris mechanisms, gyroscopes, functional equipment and storage for personal use.