RODERICK LANDRETH

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EDUCATION

Union College, Schenectady, NY *2016 to 2020*

Honors Bachelor of Science in Mechanical Engineering, Minor in Physics. **GPA: 3.71**

WORK EXPERIENCE

Mechanical Engineer, Sherpa 6, Natick, MA and San Francisco, CA *June 2020 to Present*

- Designed/fabricated modular payload system to integrate networking architecture and more onto robotic dog.
- Designed, modeled, printed and ordered parts for field use, network engineering for integration events.
- Developed software in Python & C# for command line and simulation tools.
- Researched physiological models to implement and test against raw data from networked sensors.
- Traveled 25% of the year for networking software and hardware integration events.

Engineering Intern, Greno Industries, Scotia, NY *2019*

- Modeling and technical drafting for proprietary parts with SolidWorks incorporating GD&T.
- Implemented new optimized procedures to validate fabricated parts between manufacturing and QC.

IT Technician Intern, TwinHats, Hopkinton, MA *2018*

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

RELEVANT PROJECTS

Lead Technical Engineer, SAE Aero Advanced Class Competition- Senior Project *2019 to 2020*

- Lead the mechanical design team through initial dimensional calculation/analysis and manufacturing.
- Designed and manufactured a 10ft plane with varying payloads, releasing autonomous gliders landing on target.
- Calculated static and dynamic stability and optimized scoring method to fulfill given design objectives.
- Managed a budget of $30,000, communicated with donors including college admins, alumni and companies.

System Design Engineer SAE Aero Competition Team- President; 2018 *2016 to 2020*

- Designed a plane able to disassemble into a fixed volume with payload, maximizing payload ratio for score.
- Awarded first American team in flight score for the international SAE Aero competition.
- 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.

Thermofluid Projects at Union College *2016 to 2020*

- Lead 4 person design team through economics, fluids and heat transfer of a finned coil heat recovery system.
- CPU Cooler, with SolidWorks heat transfer simulation, analytical approximation, and experimental verification.
- Fluid Dynamics lift/drag/pressure analysis of a Mercedes using PIV&Pitot setup, wind tunnel and Star-CCM+.
- Programmed finite difference extended surface heat transfer simulation, confirmed w/ analytics/experiments.

LEADERSHIP EXPERIENCE

→ President, Pi Tau Sigma Mechanical Engineering Honors Society *2019 to 2020*
→ Service Vice President, Treasurer, and New Member Educator for Alpha Phi Omega *2018 to 2020*
→ Tau Beta Pi Engineering Honors Society, Hopkinton MA *Since 2018*
→ Eagle Scout, Troop 1 Knox Trail Council, Hopkinton MA *2016*
→ Senior Patrol Leader Troop 1 Knox Trail Council, Hopkinton MA *2015*

TECHNICAL SKILLS

- Proficient with SolidWorks (CAD + Simulation), Python, MATLAB, Simulink, LaTeX, 3D printing, CURA, IdeaMaker, and Simplify3D Slicers, Microsoft 365 Suite(Power BI, Visio, Excel, PPT, etc.).
- Experience with C#, Unity, Java, Mathematica, HTML, CSS, Fusion 360 CAD, GD&T, JMP Data Analysis, Arduino and Rasp. Pi microcontrollers, Jira, Bash Scripting, VMWare.
- Active security clearance and CAC Card.