RODERICK LANDRETH

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EDUCATION

Union College, Schenectady, NY *June 2020*
Bachelor of Science in Mechanical Engineering, Physics Minor, **GPA: 3.71**
Tau Beta Pi Engineering Honors Society *Since October 2018*
Pi Tau Sigma Mechanical Engineering Honors Society Member and President *Since May 2019*

ENGINEERING PROJECTS

SAE Aero Advanced Class Competition for Senior Project *June 2019 to April 2020*
- Designed/Built a 10ft plane with static and dropped payloads, releasing autonomous gliders landing on target
- Raised/managed a budget of $30,000, communicated with departments, alumni and companies for donations
- Dimensioning based off design objectives, calculating dynamic stability and determining applicable materials

President of Union College Aero Competition Team *(Member September 2016 – present)* *September 2017 to June 2018*
- Achieved third overall as the first American team, international competition in California, April 2018
- Designed a plane able to disassemble into a fixed volume with max payload, scored by professional engineers based on a technical design report, oral presentation, assembly time, and successful flights with payload
- 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

Relevant Course Projects *(Union College)* *September 2016 to June 2020*
- CPU Cooler, with heat transfer simulation, analytical approximation, and experimental verification
- Fluid Dynamics lift, drag, and pressure analysis of a Mercedes using PIV&Pitot setup in 12"x12" wind tunnel
- Programmed finite difference extended surface heat transfer simulation, confirmed w/ analytics/experiments
- Using Arduinos, created an autonomous dice roller to roll, read, & collect the dice, displaying the result

President of FIRST Robotics Competition club [FRC] (*Hopkinton High School)* *September 2015 to July 2016*
- Annually changed competition incorporating autonomous and controlled robotic action
- Determined functional requirements, designed subsystems, bought/machined/programed a functional robot
- Competition exercised engineering design/ideation/programming skills, work ethic, planning, documentation

WORK EXPERIENCE

Engineering Internship, Greno Industries Precision Machining *June to August 2019*
- Modeled parts contracted for production using SolidWorks, and from them designed engineering drawings and inspection paperwork for the manufacturing and quality control departments while practicing GD&T
- Reorganized/redesigned interaction of part drawings between manufacturing and quality control departments

IT Technician Intern, TwinHats *July to September 2018*
- Problem solving and communicating clearly with clients, updating and navigating server architecture on 2008, 12, and 16 Windows servers, and software development with visual C#
- Learned WinCAP CAD Software to create programs for client company's CNC Machines *August 2018*

LEADERSHIP EXPERIENCE

Leadership Pre-Orientation Mentor Union College *September 2019*
Service Vice President, Treasurer, and New Member Educator for Alpha Phi Omega *June 2018 to March 2020*
President, Pi Tau Sigma Mechanical Engineering Honors Society *January 2016 to present*
Messa Minerva Council Member Union College *September 2016 to present*
- Plan, organize, and lead campus events within a proposed budget, coordinating with campus organizations

Senior Patrol Leader Troop 1, Hopkinton Ma *(In scouting since 2005)* *2015*
- Taught useful first aid, emergency preparedness and wilderness survival skills to 6th to 12th graders, 40 a year
- Ran community-wide events and fundraisers, prepared for extreme situations, donated time and goods.

Eagle Scout Project Boy Scouts of America *July 2015 to October 2015*
- Coordinated/directed 5-10 people at once, cut 500 feet of new hiking trail, cleaned 1/4 mile of old trail
- Designed/built a 15-foot bridge to go over a brook connecting this territory to the trail system nearby

TECHNICAL SKILLS

- Proficient in SolidWorks (CAD + Simulation), Python, MATLAB, Simulink, LaTeX, Microsoft Suite,
- Experience with C#, Java, Mathematica, HTML, CSS, Fusion 360, JMP Data Analysis, Arduinos, GD&T,
- Intermediate speaking/reading French