

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