

Jacob W. Rothschild

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EDUCATION

UNION COLLEGE, Schenectady, NY

Bachelor of Science in Mechanical Engineering – June 2019

Minor in Computer Science

GPA 3.184

Study Abroad: **Czech Technical University**, Prague, Czech Republic, Fall 2016

TECHNICAL SKILLS

Proficient in SolidWorks; Java, Python, HTML, and MATLAB; MacOS, Windows, and Linux; Microsoft Word and Excel

Familiar with AutoCAD, Arduino, MIPS Assembly, ARM Assembly, Git, Engineering Equation Solver (EES), STAR-CCM+

ENGINEERING PROJECTS

All-in-One CNC Machine, *Senior Capstone, Union College*

September 2018 – March 2019

- Earned the General Electric Energy Steinmetz Award for best senior capstone project in mechanical engineering.
- Designed a brand new 3-axis CNC machine with a new and novel modular tool mounting system.
- Generated articulated CAD models to demonstrate and visualize the mechanics of the CNC machine.
- Computed the mechanical requirements of each component through finite element and mathematical analyses.
- Constructed a completed, fully-functional CNC machine based on my own new and innovative designs.

Mini-Golf Robot, *Design of Mechanical Systems, Union College*

March 2018 – June 2018

- Coordinated a team of three in developing the robot wheel and chassis subsystems in accordance with the determined design constraints.
- Presented a prototype to the professor and Union College's in-house machinists on behalf of the wheels and chassis team.
- Researched mecanum wheels, including wheel mounting techniques, and wiring and programming of the motor drivers.
- Led the design and construction of all locomotion-related assemblies, including the wiring and programming required.

Ladder Climber, *Dynamics and Kinematics, Union College*

March 2017 – June 2017

- Conducted research resulting in the selection of the Robert's Mechanism as the foundation of our design.
- Prepared detailed drawings for use in manufacturing the parts of the machine.
- Assembled and troubleshooted both the prototype and final designs of the climber.

WORK EXPERIENCE

Head Student

January 2014 – Present

Union Student Technical Assistance Resource (USTAR), Union College – Schenectady, NY

- Train new members of the team in greeting and assisting student clients.
- Coordinate shift schedules such that each member is allotted hours and all shifts are covered.
- Lead regular team meetings and distribute email updates to ensure that all members are familiar with the latest technologies.
- Interact with visitors as the first point of contact and the face of the establishment.

House Manager

September 2018 – Present

Office of Fraternity and Sorority Life, Union College – Schenectady, NY

- Perform life safety inspections 3 times a year to ensure that all residents follow college and state safety regulations.
- Mediate any interpersonal conflict between residents.
- Represent the Kappa Alpha society as the liaison with the Union College administration.

LEADERSHIP EXPERIENCE

Alumni Relations Chair

March 2017 – March 2018

Kappa Alpha Society, Union College – Schenectady, NY

- Communicated with active alumni by email and phone to keep them abreast of current events in the Society.
- Established new lines of communication with less active alumni to promote strong relationships.
- Organized Concilium, Kappa Alpha Society's annual leadership conference, by working closely with the Executive Council.
- Orchestrated a full weekend's activities for the annual Kappa Alpha Society Alumni Reunion.

Editor-in-Chief

September 2015 – June 2016

The Idol, Union College – Schenectady, NY

- Curated works of writing and visual arts for publication, evaluating literary and artistic merit.
- Assembled, proofread, and edited the annual publication before printing.