

# 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 3.2; Dean's List 2019

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

- 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.
- Earned the General Electric Energy Steinmetz Award for best senior capstone project in mechanical engineering.
- Received the Senior Design Project Award from the Hudson-Mowhawk chapter of American Society of Mechanical Engineers.

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

March 2018 – June 2018

- Coordinated a team of three to develop the robot wheel and chassis subsystems in accordance with the 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.

### 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 troubleshoot both the prototype and final designs of the climber.

## WORK EXPERIENCE

### Head Student

January 2014 – June 2019

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

- Trained new members of the team in greeting and assisting student clients.
- Coordinated 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.
- Interacted with visitors as the first point of contact and the face of the establishment.

### House Manager

September 2018 – June 2019

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

- Performed life safety inspections 3 times a year to ensure that all residents follow college and state safety regulations.
- Mediated any interpersonal conflict between residents.
- Represented 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.