

Simon Eberhart

Interactive Resume Website : simoneberhart.com (I Made it!)

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Work Experience

June 2024 - August 2024

Dragonfly Engineering - Santa Clara, California

- Time spent: ~270 hours (45 hours per week over 6 weeks)
- Type: Paid Internship
- I worked for a plastic injection molding company specializing in producing advanced biotech equipment. My responsibilities included:
 - Maintaining 6-axis industrial Kuka robots
 - Contacting clients and material suppliers
 - Reverse engineering Google X robots purchased by Dragonfly Engineering
 - Manually operating a two-shot injection molding machine
 - Designing an electronics cabinet and motor brackets for a CNC milling machine
- Supervisor contact: (408) 256-1379 - [Dragonfly Engineering](#)

June 2022 - August 2022

JCC Day Camp - Woodbridge, Connecticut- *Counselor in Training*

- Time spent: ~240 hours (40 hours per week over 6 weeks)
- Type: Unpaid volunteer internship
- I worked alongside my two senior counselors to take care of our group of ~20 campers. Under their guidance, I improved leadership skills such as:
 - Conflict mediation - settling arguments between
 - Empathy - recognizing and addressing the needs of my campers
 - Mentoring and coaching - helping the campers try their best, teaching them games and activities
 - Communication - working with my counselors and my advisor to get feedback on my performance
- Supervisor contact: (917) 318-8575 - [JCC Day Camps | JCC of Greater New Haven](#)

Extracurricular Projects/Artistic Endeavors - [See more on my website](#)

2024 - Present

Statistical Arbitrage Quantitative Analysis Model

- Time spent: ~500 hours (Several hours per week over 2 years)
- Type: Personal research project
- I've spent +2 years developing, testing, and experimenting with a quantitative analysis model - a computer algorithm which analyzes stock market data to generate alpha. My algorithm analyzes 125gb of historical intraday stock data to find arbitrage opportunities. I built a compute-farm consisting of 4 old computers to process the data, all connected to a central node. My model contains the following modules:
 - Frontend UI built with CTK
 - Order placement module
 - Position monitoring module
 - Main algorithm (distributed across my compute farm)
- Code link: [Github Link](#) (Legacy Version)
- Video demonstration: [Quant Model Demonstration](#)

2024 - Present

Metalworking and Aluminum casting

- Time spent: ~50 hours (~1 hour per week over the last year)
- Type: Personal research project / Artistic project
- Using an empty oil barrel, ceramic wool, refractory cement, and a weed burner, I created a melting furnace capable of reaching 1200°C - hot enough to melt aluminium and copper. Using this, I have created several metal castings with a custom built 2 part mold. My favorite model I have made is a cityscape made of aluminum which is featured on [my website](#).

2024 - Present

8-Axis Articulated Robot Arm Transmission

- Time spent: ~250 hours (Several hours per week over the last 8 months)
- Type: Personal research project
- After spending a summer working with industrial robot arms at my internship, I decided to design and build one of my own. The only problem? Each motor can cost upwards of \$100, and I would need 6-7 of them. I came up with a solution which involves copying how cars work: Using a transmission. My robot has a single motor which drives an axle, and the 6 axes of the robot are driven upon that axle when an electromagnet is activated. I am not done designing the robot, but the electronics assembly and the 6 speed transmission are complete.
- Video Showcase: [3d printed 6 speed transmission](#) (Legacy version)

Education

2022 - Present

Amity Regional High School- Class of 2026

January 2025 - Present

Southern Connecticut State University- BIO 120

- Time spent: ~65 hours (8 hours per week over 8 weeks)
- I take the course *Microbiology 120* afterschool on Tuesdays and Thursdays alongside college students. The course is taught on the SCSU campus.
- My grade in this course is 101.76% as of 3/12/25 (Because of extra credit)
- Professor contact: vandeusen11@southernct.edu

Volunteering

July 2023 - August 2023

Camp Becket Construction Camp - Becket, Massachusetts

- Time spent: ~55 hours (14 hours per week over 4 weeks)
- Type: Volunteer Service
- Worked as part of a volunteer construction crew at a sleep away camp to build an archery pavilion and a riflery range. Building is the ultimate leadership activity; It takes problem solving, thorough planning, and most definitely it takes teamwork; All of which were skills I cultivated as a member of the construction crew. Under the supervision of a local contractor, I did things such as:
 - Roofing
 - Framing
 - Concrete Pouring
 - Decking
- [Camp Becket Website](#)

September 2024 - Present

Computing for Community- Co-Founder

- Time spent: ~60 hours (2 hours per week over 30 weeks)
- Type: Volunteer Service
- 2 friends and I created a club, which is independent from any school or other organization, to create free websites and software for local nonprofits and community organisations. Currently, we are creating a website for track and cross country athletes at my highschool which analyzes their running data to suggest changes in their training methods. This product is currently still in development, and I believe that it will be a positive service to our athletic community at Amity. As a co-founder of this club, I help organize our workflow, schedule meetings, and delegate responsibilities.
- [Computing for Community](#) - The official website for our club (I coded it)

February 2024 - May 2024

Hamden Mobile Food Pantry - Hamden, Connecticut

- Time spent: ~10 hours (1.5 hours per week over 6 weeks)
- Type: Volunteer Service
- Volunteered at the Hamden Mobile Food pantry which serves ~150 people each week in front of Booker T. Washington High School
- Supervisor contact: dvelasquez@uwgnh.org - [Hamden Food Resources | Hamden, CT](#)

Other Extracurriculars

- BBYO - Sophomore, Junior year
- JV Cross Country - Sophomore, Junior year - Coach Elledge
- JV Track - Freshman, Sophomore year - Coach Pope

Academic Honours

- 8x First Honours - 2x Junior year, 2x Sophomore year, 4x Freshman year
- 2x Second Honours - 2x Sophomore year

Technical Skills

- Fusion 360 - Solid modeling and complex assemblies
- Python3 - Multiprocessing, pandas, TK/CTK, finance, etc.
- Java - Surface level knowledge
- Electronics and electronic prototyping - PCB design using KiCad
- Lightburn - Diode lasers and laser engraving
- Engineering grade 3D printing - Nylon, Metal composites, PVA, Polycarbonate
- HTML/CSS - I currently own, develop, and maintain 2 websites
- Advanced 3D printing slicing - Prusa Slicer, Bambu Studio, Cura Slicer, Slic3r