



# Rachel Chao

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## HARDWARE

- Soldering electronic components
- PCB assembling and designing
- Power supply, DMM, oscilloscope, function generator, breadboard
- VEX V5 & IQ Robotics
- Drafting and designing
- Metal and woodworking equipment

## SOFTWARE

- C / C++ (Object Oriented Programming)
- VHDL
- Excel, Word, PowerPoint
- Visual Studio Code
- Altera Cyclone FPGA DE2-115
- MATLAB
- LTspice & Eagle
- ModelSim-Altera
- Quartus II
- Sketchup
- AutoCAD
- GitHub

## PROJECTS & TECHNICAL EXPERIENCE

### Women In Engineering Design Team

Sept 2021 - Present

- Building ROBERTA, a Remotely Operated Bot for Expedited Retrieval of Trash
- Working in a hybrid method within the Systems and Structures sub teams to research information, document progress, build parts, and troubleshoot
- Producing calculations for torque, creating testing requirements, and formulating test plans to ensure robot functionality

### C / C++ (Object Oriented Programming)

Sept 2021 - Aug 2022

#### CMPT 128 & ENSC 251

- Implemented a linked list for a student admission system, offering users functions such as: merging lists, deleting elements, sorting lists, and printing out contents
- Incorporated inheritance, polymorphism, recursive, and virtual functions to make the program run smoothly, resulting in a final grade of A+ for the class

### MATLAB

Jan 2022 - Apr 2022

#### ENSC 180 & MATH 232

- Modelled, created, and implemented functions
- Represented and analyzed data in graphical and numerical formats
- Created programs to perform mathematical computation of real-life statistics, such as pandemic population graphs and charts

### Designing, building, and running robots with VEX [www.robotevents.com/teams/VRC/2X](http://www.robotevents.com/teams/VRC/2X)

Sept 2018 - 2020

- Competed for 2 full seasons with Gladstone Robosavages all-girls team: 2X
- Prototyped, 3D modeled, built, and tested VEX V5 robots, resulting in a total of 10 trophies awarded
- Developed strategy, teamwork, communication and worked under highly competitive environments to obtain the Tournament Champion title out of 83 other teams
- Documented design process with a highly organized hand-written and electronic engineering notebook, receiving multiple Judges' Choice Awards

## EDUCATION

### Simon Fraser University

Sept 2021 - Apr 2026

Bachelor of Applied Sciences at SFU Burnaby, school of Engineering Science



## VOLUNTEER & WORK EXPERIENCE

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St. John Ambulance

Sept 2012 - Present

Number of Hours: 845+

Position in the Leadership Team: Sergeant

- Efficiency award for 4 years
- Proficiency awards for 5 categories
- Awards for 1st place in first aid and drill competitions

PetSmart North Vancouver

Sept 2020 - Jun 2022

Job position: Retail Sales Associate

- Employee of the month during the first month of the job
- Provided customers with an efficient, friendly checkout experience
- Helped overall store organization by keeping track of inventory and carefully stocking shelves

Graphic designer

Sept 2019 - Jun 2021

For Quantum Leaps STEM Conference - SFU Burnaby

- Created conference logo, social media profile pictures, newsletter graphics, and YouTube banners to promote the event
- Worked with a group of all-girl secondary school aged team members to reach out to guest presenters, as well as banks to obtain sponsorships and run the event

Hastings Racecourse

Jul 2020 - Sept 2020

Job position: Hotwalker

- Practiced self-discipline and time management skills by waking up at 4 am to be at work around 5
- Exercised racehorses by walking them before and after races, improving overall fitness
- Cleaned stables, watered horses, and helped with tacking and untacking whenever needed

Seed Generation program (EYA and Red Fox)

Jun 2020 - Sept 2020

Number of hours: 120

- Removed invasive and non-native plants from local public green spaces
- Replanted native plants and learned from Indigenous peoples about plant care and usage
- Volunteered for public initiatives, such as beach cleaning, to reduce the amount of litter in the ocean

## CERTIFICATIONS

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Advanced Medical First Responder Certification (AMFR 1)

Mar 2020

Standard First Aid and CPR/AED Certification (Level C)

Apr 2016

## EXTRA-CURRICULARS & HOBBIES

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- Royal Canadian Air Cadets  
○ Top First Year Cadet award  
○ Best Dressed Cadet award  
Sept 2018 - Sept 2019
- Mandarin Class (MK-M6) and French Classes (A1-B1)  
Sept 2009 - Jun 2018
- Visual arts: drawing, painting, digital, sewing, sculpture, and large-scale mural work
- Animal care: fostering, volunteering, training, and adopting
- Skateboarding & skateboard maintenance and repair
- Cooking