BENJAMIN NG

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Education

Sep 2022 – April 2026

UNIVERSITY OF WATERLOO   **Waterloo, Canada**
Software Engineering, Honours, Co-operative Program

Sep 2018 – June 2022

SIR WINSTON CHURCHILL HIGH SCHOOL   **Calgary, Canada**
Dual Diploma: International Baccalaureate Diploma Program and Alberta High School Diploma | GPA: 97%

Distinctions

- **Scholarships:** TD Community Leadership Scholarship ($70,000), Loran Scholarship Semifinalist ($2,000)
- **Hackathons:** 1st place BridgeHacks Hackathon for website using Flask that using machine learning to predict wildfire control; 1st place PTC Hacks for full stack website that uses computer vision to identify ingredients to suggest recipes using MongoDB, ExpressJS, NodeJS amd ReactJS; over $7,000 awarded in prizes
- **Robotics:** 2nd place Newton division of FIRST Robotics Competition World Championship (3,898 teams); 2nd place Canadian Rockies FIRST Robotics Competition (50 teams); Three 1st place regional awards

Experience

Jan 2022 – Present

INFUSION ENERGY   **Calgary, Canada**
Software Development Intern | Carbon Dioxide Recycling Startup
- Developed a full stack web application with a markdown blog functionality using MongoDB, ExpressJS, NodeJS amd ReactJS in addition to TailwindCSS for the frontend

May 2020 – Jan 2022

UNIVERSITY OF CALGARY DETTMER SEISMOLOGY LAB   **Calgary, Canada**
Seismology Data Researcher | Leading lab in seismology research in Alberta
- Created a four-dimensional grid search algorithm using Python to determine the true location where an earthquake starts with wave pattern and geological composition data collected by seismometers

June 2021 – Sep 2021

THYFORLIFE   **Vancouver, Canada**
Business Development Intern | Thyroid Health App
- Built a web scraping algorithm to centralize social media analytics using Python and Beautiful Soup
- Developed an email marketing sequence to engage over one thousand current and potential users

Sep 2014 – June 2020

FIRST ROBOTICS   **Calgary, Canada**
FLL and FRC Robot Designer | #1 robotics team in Alberta between 2015-2019
- Led the creation of a fish tank water wheel microgenerator by wiring and designing the stator, commutator and waterwheel to utilize filtration pumps already in fish tanks for the generation of electricity
- Increased efficiency of the robot attachment switching by 200% through designing a universal attachment system that uses the weight of the robot to hold down the attachments rather than permanent fastening
- Improved the utilization of robot motors by 500% through the creation of a chassis with rods on the outside of the robot rather than the inside to enable motor use in multiple attachments

Projects

PROGRAMMING
- Designed a website using flask that utilizes Google API to direct users to less busy stores during the COVID-19 pandemic and provide a remote queue system so they can stay in their cars while waiting in line
- Created a website using to web scrape the price of online products, track changes in prices, compare similar products and notify the user when the product goes on sale using Python, HTML, CSS, Flask and SQL
- Developed an algorithm in C to determine the reading level of an essay based on word length, sentence length and word choice to associate the writing complexity with a school grade

3D MODELLING
- 3D modelled and printed a longboard wall mount capable of withstanding up to 30 pounds of downwards force using fusion 360 design tools and optimizing the shape using simulated stress tests

ELECTRONICS
- Hand-wired a mechanical keyboard by creating a grid wiring system that recognizes when a key is pressed based on whether the circuit is complete to send an electrical current to a Teensy microcontroller

Personal

- Leader of principal's advisory council, debate, model united nations, announcements and physics club
- **Squash:** Placed 1st at five regional tournaments and 1st at the national Jesters Junior Open
- **Piano:** Eight years of performing experience with three 1st place and two 2nd place awards
- **Badminton:** Two 1st place and one 2nd place finishes in regional tournaments