Jacob Chisholm

Computer Engineering (ECEi)
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Education

- **Queen's University, Kingston ON** *2026*
  Computer Engineering Innovation Stream (ECEi)
- **Rockridge Secondary School** *2022*
  High School Percentage: 94%

Experience

- **ThunderBird Marine** *2022-Current*
  Yard Work Employee West Vancouver, BC
  – Worked with several others operating a 25MT (Metric Ton) Marine Travel Lift to lift, block, and relocate boats
  – Utilized rigging skills and teamwork in order to conduct sea tows on boats up to 45 ft in length
  – Communicated with co-workers to relocate and block boats in long-term storage
- **Trolls Resturaunt** *2019-2021*
  Back House Employee West Vancouver, BC
  – Worked in a fast-paced environment while fulfilling several roles including dishwashing, food prep, and line cook

Extracurricular Experience

- **Queen's Formula SAE Racing Design Team** *2023-Current*
  Team Co-Lead - Electrical/Firmware Kingston, ON
  – Actively leading all software and hardware designers on the team to create an entirely new electrical package
  – Currently working on designing the first electric racing vehicle to be produced at Queen's University
- **Ten Ton First Robotics** *2022-2023*
  Team Lead - Electrical/Software/Pneumatics West Vancouver, BC
  – Designed and built the 2023 Main Electrical Board
  – Primary architect of 2023 code. Implemented the team's first-ever command-based code base while moving the team from Java to C++ to reduce code overhead and gain performance
  – Worked with a team of 10+ to assemble and wire two competitive robots simultaneously
  – Worked under pressure to ensure the robot would perform at the highest level possible throughout the tournament

Technical Skills and Interests

Languages: C, C++, Python, VHDL, Verilog, JavaScript, NodeJS, Dart, Java

Hardware: STM32, CAN, VGA, ESP32, PS2, ARM, FPGA, Arduino

Developer Tools: ST-Link, BlackMagic Probe, VS Code, GitHub, Altium, Quartus

Office Software: Word, Powerpoint, Excel, OneNote and LaTeX

Recent Projects Project Titles Link to Portfolio Entries

- **STM32 Bare Metal Programming - Q24 ECU** *2023*
  Working to implement peripherals on an STM32 microcontroller without the use of a HAL (Hardware Abstraction Layer)
  – Tools & technologies used: STM32, C, USART, ARM GDB, BlackMagic Debug Probe, ST-Link, ADC, PLL
  – Successfully implemented the C "printf" function over UART on the STM32F446 microcontroller
  – Implemented ADC and PLL drivers as described in the STM32 datasheet
  – This is an ongoing project with Formula SAE for the Q24 ECU
- **FPGA Pong Game** *2023*
  The all classic "Pong" written in VHDL and running on a Cyclone II FPGA.
  – Tools & technologies used: VHDL, ModelSim, Altera Quartus, Cyclone II DE2 Development Board, DAC, VGA
  – A fully functional pong game running off of a Cyclone II FPGA through a VGA output and button input.
- **Personal Portfolio** *2023*
  Built a website to house all of my personal projects
  – Tools & technologies used: CSS, HTML, JavaScript, VSCode, Github Pages, NodeJS
  – This is a static site hosted by Github pages that I use to demonstrate my learning through various personal projects. The website itself is also a personal project and I learned all of the languages and tools needed to build it in under 12 hours.