Jacob Chisholm

Computer Engineering (ECEi)
Queen's University

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LinkedIn Profile
GitHub Profile

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
  - 25MT Marine Travel Lift Operation
  - Forklift Operation
  - Sea Tows (up to 45 ft boats)
  - Lifting / Launching Boats
  - Trailer Towing / Relocation
- **Trolls Resturaunt** *2019-2021*
  Back House Employee West Vancouver, BC
  - Dish Washing
  - Prep Cook
  - Line Cook

Technical Skills and Interests

Languages: C, C++, Java, Python, GCODE, GNU COBOL, JavaScript, HTML, CSS, VHDL

Developer Tools: VSCode, VIM, ModelSim, Git, GitHub, PlatformIO, STMLink, STM Utility, Arduino

Hardware: STM32, CAN Bus, VGA, Fusion 360, SolidWorks, Oscilloscope Operation, Soldering, ESP32

Areas of Interest: HDL Programming, Autonomous Robotics, FPGAs/ASICs, Embedded Systems & Software Engineering, Communications Systems, Computer Sensing Technologies

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

Certifications: Forklift, Pleasure Craft, CPR C, Bronze Cross Life Guarding, WHMIS (Workplace Hazardous Materials Information System)

Positions of Responsibility

- **Electrical & Computer Engineering Team Lead,** Queen's University Formula Team *2023-Ongoing*
- **Electrical Team General Member,** Queen's University Formula Team *2022-2023*
- **Electrical Team Lead,** Ten Ton Robotics First Robotics Competition Team *2021-2022*
- **Programming Team Lead,** Ten Ton Robotics First Robotics Competition Team *2021-2022*
- **Pnumatics Team Lead,** Ten Ton Robotics First Robotics Competition Team *2021-2022*
- **Troop Leader,** Scouts Canada *2018-2021*

Achievements

- **Deans List** Queen's University *2022*
- **FRC Excellence in Engineering Award** Awarded for Ball Indexing Algorithm *2019-2021*
- **Honour Roll (with distinction)** Rockridge Secondary *2017-2022*
- **Best Speaker** WV School District Debate Tournament *2021*
- **Tournament Champion** WV School District Debate Tournament *2021*
- **VEX Robotics Awards:** Create, Think, Build and Amaze Recipient *2018-2021*
- **Chief Scouts Award** Awarded to Scouts for leadership and world conservation efforts *2018*

Recent Projects Project Titles Link to Portfolio Entries

- **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.

- **FPGA Numerical Display** *2023*

Displaying an 8 bit binary number in decimal format on three seven segment displays

  - Tools & technologies used: VHDL, ModelSim, Altera Quartus, Cyclone II DE2 Development Board

- **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.

- **CAL** *2023*

CAN Abstraction Layer (CAL) built for MoTeC M150 ECU and PDM15

  - Tools & technologies used: C++, PlatformIO, STM32, Arduino
  - A library for easily receiving and decoding CAN messages from the MoTeC M150 ECU and PDM 15
  - Designed in conjunction with Ethan Peterson's STM32 CAN Bus library
  - Published on the PlatformIO Library Registry

- **First Robotics Programming** *2022*

All of the code required to run a competitive robot

  - Tools & technologies used: C++, Gradle, VSCode, WPILib, Java, FRC RoboRio
  - Wrote all autonomous and driver control functions within a command based program for the 2022 robot. Check out the code here.
  - 2022 FRC World Championship Competitor

- **First Robotics Electrical System** *2022*

Designed and implemented the wiring for the 2022 FRC robot

  - Tools & technologies used: Ferrule / Molex / AndyMark PowerPole / JST-XH / Dupont Crimps, CAN Bus Wiring
  - Designed the wiring harnesses for the 2022 robot. Check out the project on my portfolio.
  - 2022 FRC World Championship Competitor