# Yizuo Chen

Langley, BC — ychen615@my.bcit.ca — yizuochen1@gmail.com — +1-236-995-3236

LinkedIn — GitHub — Portfolio

## Profile

Fourth-year Electrical Engineering student at BCIT with strong academic performance and hands-on experience in circuit design, embedded/FPGA systems, and signal processing.

*Research interests: Embedded and FPGA systems, computer vision, control and automation, advanced sensors, electronic instruments and equipment for aerospace applications, signal processing, and analog/digital communications.*

## Capstone Project (In Progress)

**BCIT School of Energy**, in collaboration with **UBC Faculty of Medicine – Division of Neurology** and **BC Children's Hospital**
*Supervisors: Prof. Julie Robillard, Prof. Craig Hennessey*
Developing and integrating advanced features into social robots (Nao Robot) to support research on pediatric anxiety management and pain relief applications.

## Education

**B.Eng., Electrical Engineering**, British Columbia Institute of Technology (2022–2026)
GPA (Cumulative): 89% (4.00/4.00); GPA (Senior Years): 87%(4.00/4.00)
Selected relevant coursework: Signal Processing and Filters (95%); Electromagnetic Fundamentals (94%); Advanced Circuit Analysis (82%); Real-Time Embedded Systems (in progress); Digital Image and Video Processing (in progress)

## Experience

**Junior Control Engineer (Co-op)**, TKT Innovations Ltd., Langley, BC (May–Aug 2025)

- Optimized Siemens TIA Portal PLC logic for industrial dishwashing systems, improving timing/temperature control and reducing handling errors.
- Standardized control code architecture to align with industrial best practices and regulatory requirements.

**Electrical Engineering Intern (Co-op)**, Canature Processing, Langley, BC (Jun–Sep 2023)

- Diagnosed and resolved production-line logic issues, reducing material waste and improving throughput.
- Executed test plans and authored QA documentation for certification readiness.

**Visiting Student**, AMPEL (UBC), Vancouver, BC (Jun–Sep 2022)

- Produced Fusion 360 models and 3D-printed components to support graduate-level experimental setups; contributed to laboratory workflow improvements.

# Projects

**RFID Attendance System (In Progress)**
Used an RFID reader to detect and record student codes from BCIT ID cards. Implemented real-time data logging and transferred the list of codes to an external laptop over WiFi/Bluetooth. Integrated RTOS functionality with a periodic 100ms pulse for task scheduling and verification.

**Ultrasonic Radar (HC-SR04) on DE0-Nano-SoC** — GitHub
Built an ultrasonic distance-sensing "radar" using HC-SR04 and Altera DE0-Nano-SoC (Cyclone V). Wrote SystemVerilog for sensor timing, servo PWM, and UART; developed a Python visualization for real-time display. Supports automated sweep with thresholds and manual control via joystick/encoder; achieved stable, accurate range reporting.

**Industrial Dishwasher PLC Optimization**
Enhanced Siemens PLC logic in TIA Portal for a pet-food processing line, tightening timing/temperature control and reducing plate handling faults; improved end-of-line efficiency and reliability.

**Remote-Control Pi Car (CV + Targeting)**
Designed a custom PCB (motor driver, LEDs, I/O) and enclosure; programmed in C++/OpenCV (tested in Visual Studio, deployed on Raspberry Pi with Code::Blocks). Implemented manual keyboard control via server–client and autonomous mode for target detection and engagement.

**Automated Ball-Sorting Machine (C++/OpenCV)**
Built the mechanical structure and control software to detect and sort colored balls in queue. Added automated, push-button manual, and server–client remote modes; integrated computer vision with servo control for accurate sorting.

**Portable DC Power Supply**
Designed enclosure in SolidWorks and PCB in KiCad (fabricated at BCIT). Assembled/soldered components and validated adjustable 0–20 V DC output.

# Technical Skills

**Programming & Tools:** C, C++, Python, MATLAB/Simulink, SystemVerilog, OpenCV, Intel Quartus Prime, ModelSim, LabVIEW, Siemens TIA Portal, AutoCAD, SolidWorks, Git, Linux, LaTeX
**Embedded & Interfaces:** TI MCUs, Raspberry Pi, UART/SPI/I2C, firmware development, troubleshooting & debugging
**Hardware & PCB:** Schematic capture, KiCad PCB layout, soldering & assembly, 3D printing (G-code)
**Controls & DAQ:** PLC programming (TIA Portal), automated system design, real-time data acquisition
**Math & Analysis:** Signal processing, Linear Algebra, Multivariable Calculus, Transform Methods, Probability & Statistics for Engineers
**Test & Measurement:** Oscilloscope, DMM, Logic Analyzer, Spectrum Analyzer
**Documentation:** Assembly drawings, line diagrams, manufacturing documentation, technical reports

# Soft Skills

- Work independently and in collaborative, multidisciplinary teams
- Strong problem-solving and analytical thinking abilities
- Adaptability and quick learning in fast-paced environments