Tianxing Chen

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Education

University of British Columbia — Vancouver, BC

Bachelor of Applied Science in Computer Engineering, Dean's List — *Expected May 2027*

- **GPA:** 3.9 / 4.0
- **Courses:** Parallel Computing, Data Structures & Algorithms, Computer Systems, Operating Systems, Functional Programming, Circuit Analysis, Linear Systems, Machine Learning

Experience

Embedded Software DevSecOps Engineer — September 2025 – April 2026

Lumentum — *Ottawa, ON*

- Worked extensively in **Linux environments**, contributing directly to the codebase of Lumentum's custom **SONiC network operating system** and developing embedded software components for hardware management and firmware integration.
- Maintained and optimized large-scale **CI/CD pipelines** supporting SONiC builds, distributed testing, and automated release workflows across multiple hardware targets.
- Engineered an AI agent capable of automatically analyzing software builds, proposing corrective actions, and running verification tests on said actions, resulting in a 3× increase in resolved issues and 80% decrease in developer intervention.
- Developed a full-stack **analytics dashboard** using **React, Node.js, and Python** to collect, store, and visualize CI/CD metrics and release data, integrating with GitHub workflows and internal databases.

Robotics Team Designer — Sep 2023 – Present

TNTN Robotics — *Vancouver, BC*

- Designed a competition robot awarded VEXU World Excellence, Tournament Champion, and Robot Skills Champion, **ranking first** of 109 international university teams.
- Led mechanical design using **Onshape**, optimizing for weight and printability for rapid prototyping.
- Built sub-centimeter precision odometry and real-time motion planning using **C++** on a microcontroller platform, integrating IMUs and Optical Tracking Sensors with custom **PID controllers** for precise movement and feedback.
- Coordinated documentation and presentation strategy for competition interviews, contributing to the team's **Excellence Award** win.

AI Research Intern — Jun 2022 – Aug 2022

York University — *Toronto, ON*

- Conducted research on **reinforcement learning** for human-like autonomous driving in multi-agent environments.
- Benchmarked models for safety, efficiency, and behavioral realism using **Python** simulations and synthetic traffic datasets.
- Implemented **DRQfD** (Deep Recurrent Q-learning from Demonstration), reducing simulated collision rates by 15% in complex traffic tests.

Projects

UBC GradMap | *Java, React.js, Spring Boot, Docker, AWS* — Nov 2024 – Present

- Built a full-stack course visualization platform combining **React.js** frontend with a **Java Spring Boot** backend containerized with **Docker** and hosted on **AWS**.
- Implemented **RESTful APIs** to enable scalable communication and seamless data delivery between components.
- Created a graph-based tool to visualize course prerequisites and support optimized academic planning.

FPGA CPU | *Verilog, SystemVerilog, FPGA* — Nov 2024 – Jan 2025

- Designed and implemented a pipelined RISC CPU with hazard handling on a DE1-SOC FPGA.
- Created an ARM-like ISA and validated components using Quartus and ModelSim.
- Wrote Verilog testbenches and debugged with ModelSim and Intel Quartus Prime.

Low-Level Systems Programming | *C, C++, Linux, Bash* — Sep 2024 – Present

- Built a custom heap allocator with block coalescing and boundary tag tracking.
- Implemented virtual memory features and automated testing in Linux using Bash and GDB.
- Automated development workflows and testing using Bash and Python shell scripting.

Technical Skills

Languages: C/C++, C#, Python, Java, HTML/CSS, JavaScript, TypeScript, AArch64, x86, Verilog, PowerShell, Bash, YML
Frameworks: React.js, Node.js, Spring Boot, JUnit, Selenium, REST APIs, SQL
Tools & Platforms: Git, GitHub, Docker, VS Code, Visual Studio, Azure, Linux, SSH, FPGA, Jira, BitBucket
Core CS Topics: OOP Design, Algorithms & Data Structures, Multithreading, Systems Programming, Machine Learning

Awards

VEXU Robotics: World Excellence Award (2025), Tournament Champion (2025), Robot Skills Champion (2024, 2025)
UBC Dean's List: Recognized for top academic standing in 2024 and 2025