Tianxing Chen

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Technical Skills

Languages: C++, C, Python, Java, HTML/CSS, JavaScript, TypeScript, AArch64, x86, Verilog, PowerShell, Bash
Frameworks: React.js, Node.js, Spring Boot, JUnit, Selenium, REST APIs, SQL
Tools & Platforms: Git, Docker, VS Code, Visual Studio, IntelliJ, AWS, Linux, SSH, FPGA, MatLab
Core CS Topics: Object-Oriented Design, Algorithms & Data Structures, Multithreading, Systems Programming
CAD Software: Fusion 360, AutoCAD, SketchUp, SolidWorks, 3D Printing

Education

University of British Columbia Vancouver, BC
Bachelor of Applied Science in Computer Engineering, Dean's List *Expected May 2028*

- **GPA:** 3.9 / 4.0
- **Co-op:** Seeking 4–16 month Co-op
- **Relevant Courses:** Parallel Computing, Data Structures & Algorithms, Computer Systems, Operating Systems, Functional Programming, Circuit Analysis, Linear Systems

Experience

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.
- Co-developed a ROS-Gazebo simulation environment with LiDAR input and domain randomization for enhanced real-world transferability.
- Implemented DRQfD (Deep Recurrent Q-learning from Demonstration), reducing simulated collision rates by 15% in complex traffic tests.

Projects

Robotics Team Programmer | *C++, Sensor Fusion, Documentation, Algorithms* Sep 2023 – Present

- Programmed for a robotics design team awarded VEXU World Excellence, Tournament Champion, and Robot Skills Champion out of 109 global university teams.
- Built sub-centimeter precision odometry using real-time C++ systems that fused data from IMUs and Optical Tracking Sensors.
- Authored a 150-page technical design report now used as a reference framework for future competition teams.

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

- Built a full-stack course planner with Java backend and React frontend hosted on AWS.
- Created a graph-based tool to visualize course prerequisites and support optimized academic planning.
- Designed REST APIs and dynamic graph tools for academic path visualization.

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.

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