XINGYU (TOM) WANG

Bachelor of Applied Science in Computer Engineering

fortily@student.ubc.ca | tomxingyuwang@gmail.com | (+1)604-388-5164
luckunately.github.io | www.linkedin.com/in/tom-wang-554904220/
https://github.com/luckunately

EXPERIENCE

FPGA Soft IP Engineering Intern

Altera

May 2025 – August 2026 | Toronto, ON

- Working on Test Engine IP in the HBM (High Bandwidth Memory) subsystem
- Develop Feature, verify functionality and reduce resource usage of the Test Engine IP

Student Research Asistant

UBC

April 2024 – April 2025 | Vancouver, BC

- Investigated supervised learning methods (LSTM, Transformer, etc.) for page prefetching using collected traces; achieved better results than heuristic algorithms (LEAP) on various workloads, with ongoing challenges in deployment and inference time.
- Supervision under: Shaurya Patel, Prof. Alexandra Fedorova.

PROJECTS

Evaluating Cache Scheduling Strategies for vLLM Inference

January 2025 – April 2025

- Experiment OS cache prefetching strategies to for vLLM inference.
- Explore adaptive watermark tuning techniques to optimize memory usage and scheduling.

Capstone: Reinforcement Learning with SVT-AV1 Codec

January 2025 – August 2025

- Used reinforcement learning to improve AV1 Codec constant bitrate mode by assigning Quantization Parameter (QP) offsets to superblocks within a frame, given a frame-level QP.
- Built an RL environment by exposing the C program API, enabling per-video optimization; generalization across different videos remains challenging.

Microsystem Design with Microprocessor

Jan 2024 – April 2024

- Build memory, data bus, various I/O around a M68K CPU on FPGA. Interact with CPU using embedded C programming
- Implemented components including DRAM controller, Cache Controller, SPI, Canbus, I2C, ADC/DAC, and Simple RTOS usage with multi-threading and priority interrupts.
- Integrate the above components with VGA and Voice modules, and map addresses accordingly both in RTL design and C programming to produce a Tetris game with the M68K CPU

AWARDS

NSERC Awards
Natrual Sciences and Engineering Research Council of Canada Undergraduate Student Research Award (USRA) for May 2024 - August 2024

SKILLS

C | Python | SystemVerilog | Machine Learning | Pytorch | Operating Systems | QEMU | Computer Architecture | Digital Logic Design | VLSI | Microprocessor Design

EDUCATION

BASC. in Computer Engineering

University of British Columbia

Sept 2021 – Aug 2026

CGPA: 87%
Upper-level (3rd year+) courses: 89%
Affiliations: Systopia Lab
Course Highlights:

- **Computer Systems:** Computer Architecture, Digital & Microsystem Design, Computing Systems, VLSI
- **Software:** Software Development, Data Structures & Algorithms, Operating Systems
- **Other:** Machine Learning, Error Control Coding, Abstract Math