XINGYU (TOM) WANG

Bachelor of Applied Science in Computer Engineering

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EXPERIENCE

FPGA Soft IP Engineering Intern
Altera

📅 May 2025 – August 2026   📍 Toronto, ON

- Develop Feature, verify functionality and reduce resource usage of the Test Engine IP, which sends memory traffic to the on-chip memory (HBM, DDRRAM) through NoC interface on FPGA.
- Collaborate with cross-functional teams to ensure seamless integration of the IP into larger FPGA designs, enhancing overall system performance and reliability.

Student Research Asistant
UBC

📅 April 2024 – April 2025   📍 Vancouver, BC

- Analyze memory access patterns in various CPU and memory intensive workloads; Predict page faults individually with supervised learning methods (LSTM, Transformer, etc.); achieved better results than heuristic algorithms (LEAP).
- Supervision under: Shaurya Patel, Prof. Alexandra Fedorova in UBC Systopia Lab.

PROJECTS

Evaluating Cache Scheduling Strategies for vLLM Inference
Report avaliable at here

📅 January 2025 – April 2025   📍 Vancouver, BC

- 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   📍 Vancouver, BC

- 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.

ECC Performance Analysis on FPGA
Report avaliable at here

📅 Mar 2024 – April 2024   📍 Vancouver, BC

- RTL design of simple decoder and encoder for both Hamming code and LDPC code on FPGA.
- Analyze and compare performance on decode/encode cycle, combinational logic length, maximal frequency, gate usage, efficiency, and ease of use on DE1-SOC FPGA board.

AWARDS

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

🏆 **Dean's Honors List**
Academic Excellence Award 4 years in a row

SKILLS

SystemVerilog   C
Python   tcl   Perl
Pytorch   QEMU

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:

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