

EDUCATION

University of Toronto

Sep. 2022 – Jun. 2024

Master of Engineering, Electrical & Computer Engineering

- **MEng Thesis: Pilot Training – Angle of Arrival and Channel Estimation in 5G Networks** [Code]
- Evaluated LMMSE vs. Matrix-Pencil methods for uplink channel estimation in multicell MIMO-OFDM (3GPP-compliant), showing higher AoA accuracy under limited-antenna regimes.
- Supervisor: Prof. Raviraj Adve

University of Toronto

Sep. 2017 – Jun. 2022

Bachelor of Applied Science, Electrical Engineering

- **Capstone Project: CNN NPU Overlay & Compiler for Intel Stratix 10 NX**
- Collaborated to develop a custom Convolution Unit and DLS Compiler to optimize MobileNetV1 inference on Stratix 10 NX, achieving a 4.3× speedup over baseline Microsoft Brainwave architectures.
- Supervisors: Prof. Vaughn Betz, Andrew Boutros

PUBLICATIONS | PEER-REVIEWED CONFERENCES

1. Arash Ahmadian, Louis S.P. Liu, Yue Fei, Konstantinos N. Plataniotis, Mahdi S. Hosseini. *Pseudo-Inverted Bottleneck Convolution for DARTS Search Space*. IEEE INTERNATIONAL CONFERENCE ON ACOUSTICS, SPEECH AND SIGNAL PROCESSING (ICASSP), 2023.
2. Abnash Bassi, Yue Fei, Gilead Posluns, Mark C. Jeffrey. *Optimized Priority Scheduling for Faster Scalable Belief Propagation*. PROBABILISTIC GRAPHICAL MODELS (PGM), [In Submission], 2026.

EXPERIENCE

MediumAI · Software Development Engineer — Hybrid, Toronto, Canada · Freelance

Jan. 2026 – Present

- Build API integrations for a voice LLM-powered medical scribe agent, enabling secure multilingual clinical documentation.

iQIYI.com · Data Analyst — Remote, Beijing, China · Internship

Oct. 2025 – Dec. 2025

- Combined three-arm A/B testing with causal forests and decision-tree rules for deployable personalization, lifting renewal rates from 37% to 54.06%.

Qualcomm Canada · RFIC Design Verification Engineer — Onsite, Markham, Canada · Permanent Full-time

Jun. 2024 – Jul. 2025

- Verified UWB receiver path(analog front end); Verified WLAN CP-PLL synthesizer across 500+ channels using UVM, ensuring coverage over 2G/5G bands; Developed GRU-based multi-head model for analog gain line-up optimization and an MLP for VCO capacitance prediction, replacing manual tuning across 1000+ frequency targets.

University of Toronto – WIRLab · Research Assistant — Remote, Toronto, Canada · Contract Part-time

Jul. 2021 – Sep. 2021

- Applied PCA-based embedding visualization to investigate semantic clusters for Transformer-based NLP tasks.[Code]

Alphawave Semi · SerDes Digital Verification Engineer — Remote, Toronto, Canada · Internship

May 2020 – Jun. 2021

- Built UVM testbenches for SerDes subsystems (clocking, datapath, SRAM), expanding coverage to 50+ scenarios; Scaled Jenkins CI/CD regression from 4 to 60+ projects, enabling 15× throughput growth.

SELECTED ACADEMIC PROJECTS

Capstone Project - NPU CNN Overlay on FPGA

Sep. 2021 – Apr. 2022

- NPU HLS Compiler Infrastructure Architected a VLIW-based Python compiler that packs 130-bit instruction chains for parallel Loader, CONVU, and MFU execution. Implemented tag-based dependency tracking and explicit NOP insertion within the ISA to resolve RAW hazards in software.
- RTL Logistics Engineered a hierarchical RTL scheduler in SystemVerilog using credit-based flow control and pipelined reduction trees, achieving a verified 450 MHz Fmax on Intel Stratix 10 NX.

ECE1755 Course work - Parallel Graph-Inference Scheduler

Jan. 2024 – Apr. 2024

- **Concurrency & Scheduling:** Architected a multi-threaded asynchronous scheduler for Ising, Potts, and LDPC models using a Stealing Multi-Queue (SMQ) with lazy priority updates to resolve ordering bottlenecks in parallel Belief Propagation.
- **Sparse Data Optimization:** Optimized memory access for irregular graphs using Compressed Sparse Row (CSR) formats, minimizing cache-line contention and improving effective bandwidth on 48-thread manycore architectures.

AWARDS, CERTIFICATES, & TALKS

- Edward S. Rogers Sr. Department Betz Entrance Scholarship (\$5,000)
- Certificate in Engineering Business
- Qualcomm Panel Discussion: *Demystifying Machine Learning*

2017

Jun. 2022

Mar. 2025

TECHNICAL SKILLS

Software & Tools:: C/C++, Python (NumPy/Keras), Julia, ModelSim/VCS, Git, Jenkins CI/CD, SystemVerilog, Graph IR, SIMD, ISA Simulation, MLIR/LLVM (Logic), Quartus Prime.