Yue Fei she/her

Communication Systems & Digital Design & Computer Architecture

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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 Network**
- Evaluated LMMSE, DFT, and Matrix-Pencil methods in multicell MIMO-OFDM; demonstrated higher AoA accuracy with pilot training under limited antennas.
- Supervisor: Prof. Raviraj Adve [Code]

University of Toronto *Sep. 2017 – Jun. 2022*
Bachelor of Applied Science, Electrical Engineering

- **Capstone Project: CNN NPU Overlay (MobileNetV1) on Intel Stratix 10 NX**
- Designed custom convolution datapath replacing matrix–vector unit; achieved **4.3× speedup** and **76.6 GOP/s** throughput.
- Supervisors: Prof. Vaughn Betz, Andrew Boutros

Experience

Qualcomm Canada *Jun. 2024 – Jul. 2025*
RF / ML Systems Engineer — Markham, Canada

- Improved UWB receiver startup by reducing LNA charging delay **90%** (20 ns→2 ns).
- 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.

Alphawave Semi *May 2020 – Jun. 2021*
Digital Verification Engineer — Toronto, Canada

- 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.

Technical Skills

Programming: Python, C/C++, MATLAB, Julia, Arm Assembly, Verilog/SystemVerilog, Unix Shell
ML & Optimization: PyTorch, scikit-learn, GRU, MLP, attention models, convex optimization
Parallel Systems: Multithreading, SIMD, multi-queue scheduling
Signal Processing: OFDM, channel estimation, beamforming, Haar/DCT transforms
Tools: Git, Makefile, Jenkins, SimpleScalar