

# Daniel Liu

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## EDUCATION

### University of Toronto

Sept 2020 - June 2025

*B.A.Sc in Computer Engineering*

- 3.86/4.00 Cumulative GPA
- AI Minor
- NSERC Award Recipient

## EXPERIENCE

### Deep Learning Accelerator Engineering Intern

January 2024 - August 2024

*Altera*

- Implemented a centralized RTL configuration instruction modification system across hardware modules, increasing efficiency by **50%**, with contributions including updates to UVM test-benches and a Software C++ Model
- Productized FPGA AI Suite's software model, enabling hardware-free inference simulation and trained **500+** FAEs, saving costs and lab space for customers
- Automated model verification for customers, streamlining the process into a single script for running models through OpenVINO's model optimizer and the DLA compiler, while creating **15** new example models

### Software Engineering Intern

May 2023 - December 2023

*Intel*

- Developed an automated testing framework to enable engineers to test changes to the *Open FPGA Stack Project*; reduced manual testing by **95%**
- Integrated and ensured compatibility of over **100+** regression tests from Intel's oneAPI and OPAE-SDK projects to run regression tests on nightly, weekly, and release builds of OFS
- Designed and enhanced Python-based tools, including a headcount tracker, PDL updates, GLAP integration, and an interview automation system, significantly improving efficiency for Intel's PSAS department (**700+ employees**)
- Managed end-to-end financial data workflows using Python, SQL, and Excel, enabling real-time data updates and insights, resulting in **2x** more accurate and efficient financial management

### Teaching Assistant

January 2023 - January 2024

*University of Toronto*

- *Computer Fundamentals*: C language, data types, loops, arrays, data structures, algorithms, heuristics
- *Programming Fundamentals*: C++ language, Object Oriented Programming, big-O complexity analysis

### Frontend Developer

September 2022 - December 2022

*University of Toronto*

- Developed and maintained the frontend of the hackathon's website for **1000+** yearly visitors

### ML Researcher Intern

May 2022 - August 2022

*iQua Research Group*

- Extended federated learning framework *Plato* to support reinforcement learning algorithms for clients using PyTorch, applied to run over **100** experiments, resulting in the submission of a conference research paper

## TECHNICAL SKILLS

**Languages/Tools**: C++, C, Python, Perl, Bash, Verilog, ARM v7 Assembly, Quartus / Modelsim, SQL, Git, Excel

**Software/Hardware Courses**: Algorithms & Data Structures, Operating Systems, Compilers, Computer Networking, Software Design, Computer Organization, Digital Systems, Deep Learning, Machine Learning, Computational Intelligence

**Math Courses**: Probability, Multivariable Calculus, Linear Algebra, Complex Analysis & Differential Equations

## PUBLICATIONS

### Cascade: Curriculum Federated Reinforcement Learning with Interference Avoidance

IEEE FOGML 2024

Salma Emara, **Daniel Liu**, Fei Wang, Baochun Li

### Lethe: Interference-Based Forgetting for Continual Learning Agents in Reinforcement Learning

(Under Review)

Salma Emara, Baochun Li, Tim Zeyl, **Daniel Liu**