

Isidor Kaplan

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EDUCATION

University Of Toronto

Sept 2019 – June 2024

B.A.Sc in Computer Engineering

Toronto, ON

- Obtained 4.0/4.0 Cumulative GPA and 95.3% Cumulative Average
- Awarded the *Adel S. Sedra Gold Medal* for highest grades in Computer Engineering, Class of 2024
- Awarded Annual *Top Student Award* from Dept of Electrical and Computer Engineering (2020-21 and 2021-22)
- Awarded Charles Edwin Trim (2022), BFMI Sesquicentennial Trust (2021), and In-Course (2020) *Scholarships*

EXPERIENCE

FPGA Engineer

June 2024 - Present

Headlands Technologies

Chicago, IL

- Engineer low-latency trading infrastructure, improving stability, scalability, and performance

Software Engineering Intern

June 2023 – August 2023

Hudson River Trading

New York, NY

- Design modern C++ multi-threaded, high-performance, networked, timing-accurate market-simulation tools
- Extend proprietary C++ exception-handling framework, featured [here](#), with improved stack-tracing capabilities

FPGA Engineer Intern

May 2022 – May 2023

Intel

Toronto, ON

- Optimized next-generation FPGA routing architecture improving simulations results in VPR and Quartus
- Developed high-performance C++ graph tools to operate on FPGA routing architecture representations
- Developed Python tool for automated complex data visualization, reducing analysis time for experiments

Teaching Assistant

Sept 2021 – April 2024

University Of Toronto

Toronto, ON

- *Operating Systems*: Concurrency, synchronization, deadlock, CPU scheduling, memory management, file systems
- *Computer Organization*: ARM v7 assembly for Cortex A9, Verilog soft-core CPUs, embedded programming
- *Programming Fundamentals*: C++ language, object-oriented programming, data structures, and complexity
- *Software Comm & Design*: Supervised groups of students in competitive design project course in Modern C++

Software Engineering Intern

May 2021 – August 2021

Rocscience

Toronto, ON

- Redesigned CPillar, a \$995/license C++ geological analysis software, enabling the first major update in years

ML/AI Research Intern

May 2020 – August 2020

University Of Toronto – iQua Research Group

Toronto, ON

- Developed advanced reinforcement learning models using PyTorch, applied to congestion control, edge computing, and network-adaptive coding, resulting in the publication of two conference research papers

TECHNICAL SKILLS

Languages: Modern C++, C, Python, System-Verilog, Java, ARM v7 Assembly, Matlab

Software Courses: Algorithms & Data Structures, Operating Systems, Machine Learning, Compilers, Security

Hardware Courses: Computer Architecture, FPGA Architecture, Computer Organization, Digital Electronics

Math Courses: Multivariate Calculus, Probability, Linear Algebra, Control Theory, Complex Analysis, Economics

PUBLICATIONS

Multi-Agent Deep Reinforcement Learning for Cooperative Edge Caching via Hybrid Communication

IEEE ICC-SAC 2023

Fei Wang, Salma Emara, Isidor Kaplan, Baochun Li, Timothy Zeyl

Ivory: Learning Network Adaptive Streaming Codes

IEEE IWQoS 2022

Salma Emara, Fei Wang, Isidor Kaplan, Baochun Li

Hybrid Algorithm Based on Machine Learning and Deep Learning to Identify Ceramic Insulators and Detect Physical Damages

IEEE CEIDP 2021

Youssef El Haj, Ruth Milman, Isidor Kaplan, Ali Ashasi