Isidor Kaplan

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EDUCATION

University Of Toronto
B.A.Sc in Computer Engineering

Sept 2019 – June 2024
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

Software Engineering Intern
Hudson River Trading

June 2023 – August 2023
New York, NY

- Design modern C++ multi-threaded, high-performance, networked, timing-accurate market-simulation tools
- Extend propriatary C++ exception-handling framework, featured here, with improved stack-tracing capabilities

FPGA Engineer Intern
Intel

May 2022 – May 2023
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
University Of Toronto

Sept 2021 – April 2024
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
Rocscience

May 2021 – August 2021
Toronto, ON

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

ML/AI Research Intern
University Of Toronto – iQua Research Group

May 2020 – August 2020
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

SELECTED COURSES

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

IEEE ICC-SAC 2023

Ivory: Learning Network Adaptive Streaming Codes
Salma Emara, Fei Wang, Isidor Kaplan, Baochun Li

IEEE IWQoS 2022

Hybrid Algorithm Based on Machine Learning and Deep Learning to Identify Ceramic Insulators and Detect Physical Damages
Youssef El Haj, Ruth Milman, Isidor Kaplan, Ali Ashasi

IEEE CEIDP 2021