Isidor Kaplan

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Education

B.A.Sc Computer Engineering | **University of Toronto** ***Sept 2019 - April 2024***

- **4.0/4.0** Cumulative GPA / **96.1%** Cumulative Average / **#1** Top Student Award (Twice)

Experience

Software Engineering Intern | **Hudson River Trading** ***May 2023 - August 2023***

- *Starting in May 2023*: Write highly optimized low-latency trading algorithms

Computer Architect Intern | **Intel Corporation** ***May 2022 - May 2023***

- Design next-generation routing architecture for Intel high-performance FPGAs
- Simulate and evaluate hypothetical FPGA architectures on large design suites
- Develop internal simulation frameworks in C++ and data-analysis tools in Python

Teaching Assistant | **University of Toronto** ***Sept 2021 - April 2023***

- *Computer Organization*: ARM Assembly, CPU Design, Bare-Metal Programming
- *Software Comm & Design (In Jan 2023)*: Graph Algos, Competitive Project, C++ STL
- *Programming Fundamentals*: C++, OOP, Data Structures, Complexity

Software Developer Intern | **Rocscience Inc** ***May 2021 - August 2021***

- Reimplemented major legacy C++ commercial software for stability analysis
- Applied unsupervised machine learning to image segmentation to geo-analysis

Academic Researcher | **iQua Research Group** ***May 2020 - August 2020***

- Design and apply deep reinforcement learning algorithms under the supervision of Prof. Baochun Li to congestion control, edge computing and network-adaptive coding.

Skills

Languages
- C / C++
- Java
- Python
- MATLAB
- Rust
- Assembly

Math Courses
- Multivariable Calculus
- Probability
- Linear Algebra
- Control Theory
- Complex & ODEs
- Signals & Systems

Hardware Courses
- Comp Architecture
- Comp Hardware
- Comp Organization
- Digital Electronics
- Digital Systems
- Circuits I,II,III

Software Courses
- Algo & Data Structs
- Operating Systems
- Machine Learning
- Programming Fund
- Computer Fund
- Comm & Design

Publications

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

Awards

Edward S. Rogers Sr. Department of Electrical and Computer Engineering *Top Student Award* (**2020-21**, **2021-22**)

Charles Edwin Trim *Scholarship* (**2022**)

BFMI Sesquicentennial Trust *Scholarship* (**2021**)

In-Course *Scholarship* (**2020**)

First-Year *Fellowship* (**2020**)

Deans List (**2019 - Present**)

Fields

- High Frequency Trading
- Computer Architecture
- Software Engineering
- Hardware Engineering
- FPGA System Design
- Reinforcement Learning

Projects

See all projects here

Verilog Processors with Interrupts and Pipelining

CPillar Structural Stability Analysis Software in C++

Reinforcement Learning PyTorch Framework

NPC Graph Solver C++

Realtime Online-Learning Deep Video Compression

OS161 Operating System