Isidor Kaplan

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Education

Bachelor of Applied Science, *Computer Engineering* | **University of Toronto** ***2019 - Present***

- **4.0/4.0** Cumulative GPA / **96.1%** Cumulative Average / **#1** Top Student Award (Twice)
- **Focus**: Computer Architecture, Software Engineering, Hardware Engineering, Machine Learning
- **Certificates**: Artificial Intelligence Certificate (2/3), Engineering Business Certificate (1/3)

Professional Experience

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

- Design and Research next-generation routing architecture for Intel high-performance FPGAs

Teaching Assistant | **University of Toronto** ***Sept 2021 - April 2022***

- **ECE243** *Computer Organization*: ARM A9 Assembly, Processor Design (Verilog)
- **ECE244** *Programming Fundamentals*: C++, OOP, Data Structures, Complexity

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

- Reimplemented a Major legacy C++ commercial software for stability analysis from scratch.
- Applied Unsupervised Machine Learning Image Segmentation.

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

- Applied deep reinforcement learning to congestion control, edge computing and adaptive coding

Engineering Projects

See all projects at: *https://www.linkedin.com/in/isidorjkaplan/details/projects/*

Processor Design Project | *https://bit.ly/3NmP8K4* / *https://bit.ly/3zsc8l8*

- Designed System-Verilog 16-bit, 8-register, interrupt-enabled and pipelined soft processors.

CPillar | https://bit.ly/3zvHiYO

- Redesigned CPillar from the ground-up in C++ allowing for first major update (v5.005) in years.

Deep Reinforcement Learning Framework | *https://bit.ly/3UaLF38*

- Designed PyTorch DRL framework used for research papers at iQua Research Group

Realtime Online-Learning Deep Video Compression | *https://bit.ly/3sJGM5G*

- Designed video compression scheme that learns in real-time with ~23x compression

Map Utility | *https://bit.ly/3UaqoH2*

- Implemented large-scale Google-maps inspired UI / backend program in C++
- Developed simulated-annealing based heuristics for NP-C graphing problems.

Publications

Ivory: Learning Network Adaptive Streaming Codes **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, **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**)

Technical Skills

Technical Tools

- C / C++
- Python
- Java
- Rust
- ARM v7 Assembly
- System Verilog / RTL
- Quartus / ModelSim
- MATLAB

Industry Knowledge

- Computer Architecture
- Machine Learning
- Reinforcement Learning
- FPGA System Design
- Software Design
- Embedded Systems
- Operating Systems