





Isidor Kaplan

-  isidor.kaplan@utoronto.ca
-  linkedin.com/in/isidorjkaplan
-  github.com/isidorjkaplan
-  isidorkaplan.ca/transcript.pdf

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

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/3zvHiYQ>

- 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