Victor Kariofillis

Contact Information

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Research Interests

My research in Computer Architecture focuses on enhancing system performance, energy efficiency, and adaptability.

For my PhD, I work on energy-efficient mobile architectures and benchmark characterization. Next, I aim to research Brain-Computer Interface (BCI) workloads.

During my Master's, I developed Precompression for better cache compression.

I am also interested in the social aspects of computing.

Education

Jan. 2020 – Jun. 2025 (Tentative)	University of Toronto, Canada Edward S. Rogers Sr. Department of Electrical & Computer Engineering Doctorate of Philosophy *Current CGPA*: 3.88 / 4.00
Sept. 2017 – April. 2020	University of Toronto, Canada Edward S. Rogers Sr. Department of Electrical & Computer Engineering Master of Applied Science *CGPA*: 3.94 / 4.00 Thesis: Precompression: A Prelude to Cache Compression
Sept. 2010 – July. 2017	University of Piraeus, Greece Department of Informatics Bachelor of Science *Major*: Network and Computing Systems (NCS) *GPA*: 8.26 / 10.0 — Honours: Very Good *Thesis*: Performance Measuring of a Multicore Heterogeneous System

Teaching Experience

Winter 2023	**ECE1718: Special Topics in Computer Hardware: Socially Responsible Computing** University of Toronto, Canada *Providing educational support to students. Creating and marking assignments. Marking projects.*
Summer 2022 – Fall 2023	**ECE253: Digital and Computer Systems** University of Toronto, Canada *Course Development. Updating labs (handouts, code, automarker) to RISC-V assembly. Providing educational support to students. Supervising and marking labs. Creating exam questions and marking exams.*

Fall 2021	**ECE241: Digital Systems** University of Toronto, Canada *Providing educational support to students. Supervising and marking labs. Validating exam questions and marking exams.*
Winter 2021	**ECE243: Computer Organization** University of Toronto, Canada *Providing educational support to students. Supervising and marking labs. Creating exam questions and marking exams.*
Winter 2019 – Winter 2024	**ECE342: Computer Hardware** University of Toronto, Canada *Providing educational support to students. Supervising and marking labs. Creating exam questions and marking exams.*
Fall 2018 – Fall 2023	**ECE552: Computer Architecture** University of Toronto, Canada *Providing educational support to students. Teaching tutorials, supervising and marking labs and exams.*

Scholarships

2022	Onassis Foundation Scholarship — USD 14000

Publications

[1] **Victor Kariofillis**, Natalie Enright Jerger, "Workload Characterization of Commercial Mobile Benchmark Suites", *IEEE International Symposium on Performance Analysis of Systems and Software (ISPASS) 2024.*

[2] **Victor Kariofillis**, Jingyang Liu, Natalie Enright Jerger, "Ethical Considerations of Benchmarking", *Workshop on Hot Topics in Ethical Computer Systems (HotEthics) 2024.*

[3] Karthik Ganesan, **Victor Kariofillis**, Julianne Attai, Ahmed Hamoda, Natalie Enright Jerger, "DINAR: Enabling Distribution Agnostic Noise Injection in Machine Learning Hardware", *Hardware and Architectural Support for Security and Privacy (HASP) 2023.*

Notable Course Projects

PhD Projects

Fall 2020	Implementations of i) a Maze Router, ii) an Analytical Placer and iii) a Branch-and-Bounding Partitioning Algorithm tool for the course *CAD for Digital Circuit Synthesis and Layout (ECE1387H)*
Fall 2020	Implementations of i) Hardware Designs for a 5th Taylor Polynomial , ii) 2D Convolution Engine on an FPGA and iii) a RAM Mapper CAD tool for the course *Reconfigurable Computing & FPGA Architecture (ECE1756H)*

Master's Projects

Winter 2018	XOR Cache Compression Technique (Proof of Concept) for the course *Advanced Computer Architecture (ECE1718H)*
Winter 2018	Approximate Decoupled Coherence Protocol for the course *Parallel Computer Architecture & Programming (ECE1755H)*
Fall 2017	PINocchio: PRAM-based Approach for Parallel Program Inspection for the course *Parallel Computer Architecture & Programming (CSC2231H)*

Technical Skills

Languages: C/C++, R, Bash Scripting
Tools: gem5, Intel Pin, SimpleScalar, R Studio, Quartus