Vemmou Marina

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Education

Georgia Institute of Technology, Atlanta, GA, USA — Aug 2019 – present

PhD Candidate in Computer Science, Track: Computer Architecture
Advisor: As. Prof. Alexandros Daglis
GPA: 4.0/4.0
Area of Research: Datacenter architectures, novel network and memory systems for the cloud and edge, hardware – software co-design

National Technical University of Athens (NTUA), Athens, Greece — Dec 2013 – Jun 2019

5-year joint BSc &MSc degree in Electrical and Computer Engineering
GPA: 9.20/10 (top 3%)
Diploma Thesis: Application classification techniques' design for interference mitigation in multiprocessor systems
Advisor: Prof. Georgios Goumas

Research and Internship Experience

Microsoft Research, Redmond, USA — May 2022- Aug 2022

Supervisor: Sameh Elnikety
Evaluation of hardware and software techniques to accelerate networking and enforce QoS for containerized environments

School of Computer Science, College of Computing, Georgia Institute of Technology — Aug 2019 – present

Design and re-imagining of existing interfaces between hardware and software components to address the challenges of new applications and technologies in the datacenter and edge infrastructure, with a focus on high-speed networking and non-volatile memory

Computer Systems Laboratory, School of Electrical and Computer Engineering, NTUA — Mar 2018 – Jun 2019

Study and design of techniques for efficient, online, lightweight characterization and classification using machine learning techniques. Member of the ACTiCLOUD (https://acticloud.eu/) project

Publications

Patching up Network Data Leaks with Sweeper. **Marina Vemmou**, Albert Cho, Alexandros Daglis. MICRO 2022

Analysis of the Leaky DMA problem in datacenter servers, where the constantly increasing networking speeds and buffer sizes have resulted in incoming network traffic no longer fitting in the Last Level Cache and "leaking" to main memory, creating excess memory bandwidth interference and throughput degradation. Proposed Sweeper, a practical hardware – software mechanism that alleviates Leaky DMA with minimal modifications to application code and microarchitecture and drastically improves throughput.

COSPlay: Leveraging Task-Level Parallelism for High-Throughput Synchronous Persistence. **Marina Vemmou**, Alexandros Daglis. MICRO 2021

A hardware – software mechanism that combines fast, userspace threading (coroutines) with minimal modifications to CPU microarchitecture to context-switch between independent tasks on long-latency, expensive write operations to persistent memory without violating the existing persistency protocol that dictates the correct order between writes of a single task.

High-Throughput Persistence with Coroutines. **Marina Vemmou**, Alexandros Daglis. The Third Young Architect Workshop @ ASPLOS 2021

Awards and Scholarships

Georgia Tech SCS Incubator Graduate Fellowship — Fall 2021

Gerondelis Foundation Graduate Study Scholarship — Fall 2020

Teaching Experience

Teaching Assistant, School of Computer Science, Georgia Institute of Technology — Fall 2020, Fall 2022
CS 6290 - High Performance Computer Architecture

Lab Assistant, School of Electrical and Computer Engineering, NTUA — Spring 2018
Operating Systems

Skills (Languages and Tools)

C/C++, Python, Bash, Latex, Intel RDT, Pin, Assembly (x86, ARM), Hardware Performance Counters, ZSim, gem5

Languages

English: full professional proficiency, CPE Uni. of Cambridge, TOEFL iBT: 116/120, GRE Q/V/W: 170/158/4.5
Greek: native

Societies and Affiliations

ACM Student Member Sep 2021 – present

Electrical Engineering Students' European Association (EESTEC), LC Athens Apr 2016 – Jul 2019
Promotion Coordinator, volunteer, representative in international workshops