# Manos Pavlidakis

• **Email** • **LinkedIn** • **Github** • **Scholar** • **+30 6974121338** • **Greece, Crete**

I am a software engineer with a Ph.D. (defense scheduled on 9th January 2024) in Computer Science and Engineering from the University of Crete, Greece. My doctoral research on the "*Transparent Spatial Sharing of Multiple and Heterogeneous Accelerators*" provided extensive hands-on experience in various accelerator programming models and runtimes, including OpenCL, CUDA, and ROCm. Additionally, I am well-versed in popular machine learning frameworks such as PyTorch, Caffe, and TensorFlow, showcasing a comprehensive skill set at the forefront of technology. I have cultivated a profound familiarity with CUDA and NVIDIA GPUs due to my attendance at more than four courses and my research. A testament to my proficiency and commitment to the field is my role in identifying and reporting two core performance issues related to NVIDIA GPU sharing (ID3559606, ID3350973).

## TECHNOLOGIES AND LANGUAGES

| |
|---|
| C/C++, CUDA, OpenCL, ROCm, CUDA PTX virtual assembly, Java |
| Git, Containers, TensorFlow, PyTorch, Caffe, Bash scripting |
| NVIDIA GPUs, AMD GPUs, Intel Altera FPGA |

## PROFESSIONAL EXPERIENCE

| | |
|---|---|
| **Graduate Research Assistant** at CARV, ICS-FORTH<br>• Design and develop *Arax*, a runtime that manages and shares transparently multiple and heterogeneous accelerators | Sep. 2017 – Jan. 2024 |
| **Research Engineer** at CARV, ICS-FORTH<br>• Design and develop *Vinetalk*, a framework that simplifies FPGA access while enabling FPGA sharing across different applications | Jan. 2017 – Sep. 2017 |
| **Intern** at CARV, ICS-FORTH<br>• Working on implementing an HDFS library over NoSQL DB | Jun. 2016 – Sep. 2016 |
| **Free launcher**<br>• Android application and website development | Jun. 2013 – Jul. 2014 |

## EDUCATION and CERTIFICATIONS

| | |
|---|---|
| **Ph.D.** at Computer Science Department, University of Crete | Sep. 2017 – Jan. 2024 |
| **MSc** at High Performance Distributed Computing track, Vrije Universiteit (VU) Amsterdam | Sep. 2014 – Jun. 2016 |
| **BSc** (integrated master) at the Department of Information and Communication Systems Engineering, University of Aegean, Samos | Sep. 2006 – Jun. 2012 |
| NVIDIA **certification**: Fundamentals of Accelerated Computing with CUDA C/C++ | Aug. 2022 |
| NVIDIA **certification**: Scaling CUDA C++ Applications to Multiple Nodes | May 2022 |

## TEACHING EXPERIENCE

| | |
|---|---|
| Teaching Assistant<br>• Digital design (CS120)<br>• Programming lab (CS255)<br>• Embedded System Lab (CS428) | <br>Winters 2017 – 2022<br>Springs 2017 - 2019 |

| | |
|---|---|
| • Theory of Computation (CS280) | Springs 2020 – 2022<br>Winter 2023 |

**PUBLICATIONS**

| | |
|---|---|
| Guardian: Data Isolation for Multi-Tenant GPU Sharing (Under Submission) | 2023 |
| Arax: A Runtime Framework for Decoupling Applications from Heterogeneous Accelerators (SoCC'22) | 2022 |
| TReM: A Task Revocation Mechanism for GPUs. (HPCC'20) | 2020 |
| The VINEYARD integrated framework for hardware accelerators in the cloud. (SAMOS'18) | 2018 |
| VineTalk: Simplifying Software Access and Sharing of FPGAs in Datacenters. (FPL'17) | 2017 |
| KVFS: An HDFS library over NoSQL DB. (CLOSER '16) | 2016 |
| Introducing Touchstroke: Keystroke-based Authentication System for Smartphones. (Journal: Security and Communication Networks) | 2016 |

**FELLOWSHIPS and AWARDS**

| | |
|---|---|
| Scholarship from ADMHE for the academic year 2020-2021 | 2021 |
| Scholarship from ADMHE for the academic year 2019-2020 | 2020 |
| $1,000 in Google Cloud Platform from Google for Education | 2020 |
| Two Intel Altera FPGAs (Arria 10) from the Intel FPGA Academic Program | 2019 |
| One NVIDIA Titan V from the NVIDIA GPU Grant Program | 2018 |

**CONFERENCES, WORKSHOPS, and other EVENTS**

| | |
|---|---|
| Participate at NVIDIA event hosted at SC23 | 2023 |
| Participate in the event "NVIDIA AI and Data Science Virtual Summit" | |
| Participate in the event organized by EuroCC, "NVIDIA Developer Day for EuroCC" | |
| Participate in the workshop "Seamlessly Migrate CUDA Code to SYCL Code with SYCLomatic" | |
| Participate in the event "Facebook Systems @Scale Summer" | |
| Participate in the event "Advanced SYCL Concepts – Graphs and Dependencies" | |
| Present "Arax" (and participate) at the 13th Symposium on Cloud Computing (SoCC'22) | 2022 |
| Present at EuroCC EU event: 1st presentation: Why Accelerators? GPUs and their advantages.<br>2nd presentation: Introduction to CUDA | |
| Reviewer at ACM Transactions on Architecture and Coder Optimization (TACO'22) | |
| Head of the Organizing Committee for the 3rd Career Fair: Meet the companies | |
| Present "TReM" at Microsoft Research, Cambridge, Virtual Workshop on Next-Generation Cloud Infrastructure | 2021 |
| Head of the Organizing Committee for the event Career Fair: Prepare for the Interview | |
| Head of the Organizing Committee for the 2nd Career Fair: Meet the Companies | |
| Present "TReM" (and participate) at the International Conference on High-Performance Computing and Communications (HPCC'20) | 2020 |
| Participate and host virtual sessions at the European Conference on Computer Systems (EuroSys'20) | |
| Participate in the conference Symposium on Operating Systems Design & Implementation (OSDI'20) | |
| Participate in the conference USENIX 2020 Annual Technical Conference (ATC'20) | |
| Participate in Intel's webinar 2020, "Migrate Existing CUDA Applications to DPC++ Code" | |
| Participate in the International Parallel and Distributed Processing Symposium (IPDPS'20) | |
| Participate in the conference International Symposium on Computer Architecture (ISCA'20) | |
| Head of the Organizing Committee for the 1st GSA-CSD'19: Graduate Student Conference | 2019 |
| Present "Flexy; Elastic Provisioning of Accelerators in Single Node with Multi-GPUs" (and participate) at the HIPEAC Summer School ACACES'18 | 2018 |
| Present "Vinetalk" (and participate) at the Conference on Field-Programmable Logic and Applications (FPL'17) | 2017 |