Antonios (Antonis) Psistakis

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Education

University of Illinois at Urbana-Champaign (UIUC) 08/2020 - Present

Doctor of Philosophy (PhD) in Computer Science

- Expected Graduation: August 2025
- Selected advanced courses:
  - Parallel Computer Architectures (CS-533)
    - Project: Cache coherence on GPUs (using MGPUSim)
  - Advanced Memory and Storage Systems (ECE-598MS)
    - Project: FaRM for Distr. Transactions using 1-sided RDMA
  - Advanced Operating Systems (CS-523)
    - Project: Performance Analysis of Mellanox RDMA

University of Crete (UOC) 09/2017 - 11/2019

Master of Science (MSc) in Computer Science and Engineering

- Specialisation areas: “Micro-electronic Systems Architecture” and “Parallel and Distributed Systems”
- Thesis: “**Handling of Memory Page Faults during Virtual-Address RDMA**”. Avoid pinning of the process page tables that hinders the memory utilisation. A design with non-pinned pages results in page faults that require handling.
- Selected advanced courses:
  - Parallel Computer Architecture (CS-527)
  - Packet Switch Architecture (CS-534)
  - Embedded Systems Lab (CS-428)
  - Digital Circuits Design Lab Using EDA Tools (CS-523)
    - Experience: System Verilog programming & Synopsys’ tools
    - Project: Implementation of 32-bit RISC-V for integers (rv32i)
- GPA: 9.14 out of 10.0

Bachelor of Science (BSc) in Computer Science 09/2013 - 07/2017

- Thesis: “**IOMMU Support for Virtual-Address Remote DMA in an ARMv8 environment**”. Virtual-address RDMA using ARM’s IOMMU (SMMU) on Xilinx Zynq Ultrascale+
- Selected advanced courses:
  - Computer Architecture (CS-425)
  - Energy Aware Computing (DAT-277), Chalmers Univ. of Technology (Sweden)
- GPA: 8.5 out of 10.0 (Ranked 3rd in class of 2017)

Research and Work Experience

NVIDIA 05/2022 - 08/2022

Graduate Research Intern

- Topics: Congestion control & fairness in networks, and formal analysis.

UIUC and i-acoma group 08/2020 - Present

Research Assistant

- Topics: Combining consistency and persistency models in datacenters, exploiting the sub-microsecond latency capabilities provided by RDMA, and designing and implementing efficient distributed transactions.
- Supervisor: Prof. Josep Torrellas

Computer Architecture and VLSI Systems Laboratory (CARV), ICS-FORTH 12/2019 - 08/2020

Research Engineer

- Topics: Evaluate and expand the hardware prototypes designed and developed by the CARV laboratory, focusing on an FPGA-based RDMA.
- Supervisor: Prof. Manolis GH Katevenis

UOC 09/2017 - 11/2019
Teaching Assistant
- Digital Design (CS-120): Fall 2017, Fall 2018
- Computer Organization (CS-225): Spring 2018, Spring 2019

Scholarships/Awards

UIUC & i-acoma group 08/2020 - Present
Research Assistantship

CARV, ICS-FORTH and University of Crete 11/2017 - 11/2019
Graduate Assistantship

CARV, ICS-FORTH 07/2017 - 10/2017
Training-Specialization Scholarship

CARV, ICS-FORTH and University of Crete 2014 - 2017
Distinguished Undergraduate Scholarship "Stelios Orphanoudakis"
Awarded for being among the top 3 students during the 1st, 2nd and 3rd year of the undergraduate studies

Technical Skills

Experience with:
- Programming Languages: C, C++, Bash, Verilog, System Verilog, Python, MATLAB, JAVA, SQL, HTML, PHP
- Architectures: ARMv8, RISC-V
- MPSoCs: Xilinx UltraScale+
- Tools: Xilinx (Vivado, SDK, ...), Synopsys (VCS, ...)
- Operating Systems: Linux, macOS, Windows

Publications

1. **Psistakis A**., Chrysos N., Chaix F., Asiminakis M., Gianioudis M., Xirouchakis P., Papaefstathiou V., Katevenis M.. (2022). "**Optimized Page Fault Handling during RDMA**". IEEE Transactions on Parallel and Distributed Systems (TPDS 2022).
2. Kokolis A., **Psistakis A.**, Reidys B., Huang J., Torrellas J.. (2021). "**Distributed Data Persistency**". 54th IEEE/ACM International Symposium on Microarchitecture (MICRO 2021). **Top Picks 2022**.
3. **Psistakis A**., Chrysos N., Chaix F., Asiminakis M., Gianioudis M., Xirouchakis P., Papaefstathiou V., Katevenis M.. (2020). "**PART: Pinning Avoidance in RDMA Technologies**". 14th IEEE/ACM International Symposium on Networks-on-Chip (NOCS 2020).
4. Asvestopoulou T., Manousaki V., **Psistakis A.**, Nikolli E., Andreadakis V., Aslanides I.M., Pantazis Y., Smyrnakis I., Papadopouli M.. (2019). "**Towards a robust and accurate screening tool for dyslexia with data augmentation using GANs**". IEEE 19th International Conference on BioInformatics and BioEngineering, BIBE 2019 Athens, Greece, October 28 to 30, 2019.

Workshops

1. Ploumidis M., Kallimanis N., Asiminakis M., Chrysos N., Xirouchakis P., Gianoudis M., Tzanakis L., Dimou N., **Psistakis A.**, Peristerakis P., Kalokairinos G., Papaefstathiou V. and Katevenis M.. (2019). "**Software and Hardware co-design for low-power HPC platforms**", In the 5th International Workshop on Communication Architectures for HPC, Big Data, Deep Learning and Clouds at Extreme Scale (ExaComm'19) - in conjunction with the International Supercomputing Conference (ISC), Frankfurt, Germany, June 20, 2019.
2. Ploumidis M., **Psistakis A.**, Asiminakis M., Xirouchakis P., Gianioudis M., Peristerakis P., Chaix F., Papaefstathiou V., Chrysos N., & Katevenis M.. (2018). "**Exploiting the ExaNeSt Communication Primitives for a High Performance MPI Library**". ExascaleHPC: the ExaNoDe, ExaNeSt, EcoScale, and EuroEXA projects, in conjunction with the HiPEAC 2018 Conference, Manchester, UK, 23 January 2018.

Posters

1. **Psistakis A.**, Peristerakis P., Xirouchakis P., Gianioudis M., Kalokairinos G., Chrysos N., Chaix F., Papaefstathiou V., and Katevenis M.. (2018). "**User-level RDMA with IOMMU Support on ARM Platforms**". Poster presented at the 14th HiPEAC Advanced Computer Architecture and Compilation for Embedded Systems (ACACES 2018)

Activities/Voluntary Experiences

- Volunteer in HiPEAC's Computing System Week (CSW) Autumn 2018 in Heraklion. Two student tracks: a) HiPEAC Student Challenge V, Inspiring Futures! The HiPEAC Career Advice and b) Mentoring session [October 29-31, 2018]
- Volunteer in the 1st and 2nd TEDx in Heraklion, Crete [February 2014 and February 2015]