

Antonios (Antonis) Psistakis

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in antonispsistakis 📱 psistakis

Education

University of Illinois at Urbana-Champaign (UIUC) Aug 2020 – Present
PhD in Computer Science

- Expected Graduation: August 2026
- **Research Areas:** Architecture, Compilers, and Parallel Computing

University of Crete (UOC) Sept 2017 – Nov 2019
MSc in Computer Science and Engineering

- **Specialization:** Microelectronic Systems Architecture, Parallel and Distributed Systems
- **Thesis:** *Handling of Memory Page Faults during Virtual-Address RDMA* —enabling online page fault handling, eliminating the need to pin process page tables, and improving memory utilization.
- GPA: 9.14 / 10.0

University of Crete (UOC) Sept 2013 – Jul 2017
BSc in Computer Science

- **Thesis:** *IOMMU Support for Virtual-Address Remote DMA in an ARMv8 Environment* — Virtual-address RDMA using ARM's IOMMU (SMMU) on Xilinx Zynq Ultrascale+.
- GPA: 8.5 / 10.0 (Ranked 3rd in class of 2017)

Research and Work Experience

Research Assistant Urbana, IL
UIUC and i-acoma group Aug 2020 – Present

- Combining consistency and persistency models in datacenters, exploiting the sub-microsecond latency of RDMA, utilizing SmartNICs, and designing efficient distributed transactions. I have also worked on fault tolerance for leaderless and Compute Express Link (CXL)-enabled systems.
- Supervisor: Prof. Josep Torrellas

Graduate Research Intern Mountain View, CA
Microsoft Research (Azure Systems Architecture & Pathfinding) May 2025 – Aug 2025

- Emerging CXL memory pooling and sharing devices; exploring functionality and performance.

Graduate Research Intern Redmond, WA
Microsoft (Azure Research – Systems) May 2024 – Aug 2024

- CXL characterization and use case exploration for memory pooling.

Graduate Research Intern Urbana, IL (remotely)
NVIDIA May 2022 – Aug 2022

- Research on congestion control, fairness mechanisms, and formal analysis for CPU interconnects.

Research Engineer Heraklion, Greece
CARV Lab, ICS-FORTH Dec 2019 – Aug 2020

- Evaluated and expanded hardware prototypes, focusing on FPGA-based RDMA systems.
- Supervisor: Prof. Manolis G.H. Katevenis

Scholarships, Fellowships, and Awards

Graduate Student Fellowship Urbana, IL
Siebel School of Computing and Data Science, UIUC Aug 2023 – Present

Research Assistantship <i>UIUC & i-acoma group</i>	<i>Urbana, IL</i> <i>Aug 2020 – Present</i>
Mavis Future Faculty Fellowship <i>The Grainger College of Engineering, UIUC</i>	<i>Urbana, IL</i> <i>2025-2026</i>
Kenichi Miura Award <i>Siebel School of Computing and Data Science, UIUC</i>	<i>Urbana, IL</i> <i>Spring 2025</i>
Graduate Assistantship <i>CARV, ICS-FORTH & University of Crete</i>	<i>Heraklion, Greece</i> <i>Nov 2017 – Nov 2019</i>
Training-Specialization Scholarship <i>CARV, ICS-FORTH</i>	<i>Heraklion, Greece</i> <i>Jul 2017 – Oct 2017</i>
Distinguished Undergraduate Scholarship “Stelios Orphanoudakis” <i>CARV, ICS-FORTH & University of Crete</i>	<i>Heraklion, Greece</i> <i>2014 – 2017</i>
◦ Awarded for being among the top 3 students during the 1st, 2nd, and 3rd year of undergraduate studies	

Conference and Journal Publications

1. Zhong Y., Berger D., Zardoshti P., Saurez E., Nelson J., Ports D., **Psistakis A.**, Fried J., Cidon A. (2025). “*Oasis: Pooling PCIe Devices Over CXL to Boost Utilization*”. **20th ACM Symposium on Operating Systems Principles (SOSP 2025)**.
2. Kokolis A., **Psistakis A.**, Reidys B., Huang J., Torrellas J. (2024). “*HADES: Hardware-Assisted Distributed Transactions in the Age of Fast Networks and SmartNICs*”. **51st Annual International Symposium on Computer Architecture (ISCA 2024)**.
3. **Psistakis A.**, Chaix F., Torrellas J. (2024). “*MINOS: Distributed Consistency and Persistency Protocol Implementation & Offloading to SmartNICs*”. **30th IEEE International Symposium on High-Performance Computer Architecture (HPCA 2024)**.
4. **Psistakis A.**, Chrysos N., Chaix F., Asiminakis M., Ganioudis M., Xirouchakis P., Papaefstathiou V., Katevenis M. (2022). “*Optimized Page Fault Handling during RDMA*”. **IEEE Transactions on Parallel and Distributed Systems (TPDS 2022)**.
5. Kokolis A., **Psistakis A.**, Reidys B., Huang J., Torrellas J. (2022). “*Distributed Data Persistency*”. **IEEE Micro Top Picks in Computer Architecture**, vol. 42, no. 4, pp. 107–115, July–Aug. 2022.
6. Kokolis A., **Psistakis A.**, Reidys B., Huang J., Torrellas J. (2021). “*Distributed Data Persistency*”. **54th IEEE/ACM International Symposium on Microarchitecture (MICRO 2021)**. *Selected as an IEEE Micro Top Pick in Computer Architecture*.
7. **Psistakis A.**, Chrysos N., Chaix F., Asiminakis M., Ganioudis 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)**.
8. Asvestopoulou T., Manousaki V., **Psistakis A.**, Nikolli E., Andreadakis V., Aslanides I.M., Pantazis Y., Smyrnakis I., Papadopoulou 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 28–30, 2019.

Workshop Publications

9. Zhong Y., Berger D., Zardoshti P., Saurez E., Nelson J., **Psistakis A.**, Fried J., Cidon A. (2025). “*Beware, PCIe Switches! CXL Pools Are Out to Get You*”. **The ACM SIGOPS 20th Workshop on Hot Topics in Operating Systems 2025 (HotOS XX)**, Banff, Alberta, Canada, May 14–16, 2025.
10. **Psistakis A.**, Alverti C., Torrellas J. (2025). *Lightning Talk*. “*LeaderlessCXL: Leaderless Distributed Systems in the Era of CXL*”. **12th Workshop on Principles and Practice of Consistency for Distributed Data (PaPoC 2025)** – in conjunction with ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS) 2025 and EuroSys 2025, Rotterdam, Netherlands, March 30–April 3, 2025.
11. **Psistakis A.**, Ocalan B., Chaix F., Alagappan R., Torrellas J. (2023). “*IASO: Recovery in Leaderless Distributed Systems*”. **SOSP Doctoral Workshop 2023 (SySDW23)** – in conjunction with the 29th ACM Symposium on Operating Systems Principles, Koblenz, Germany, October 23–26, 2023.

12. Ploumidis M., Kallimanis N., Asiminakis M., Chrysos N., Xirouchakis P., Gianoudis M., Tzanakis L., Dimou N., **Psistakis A.**, Peristerakis P., Kalokairinos G., Papaefstathiou V., Katevenis M. (2019). “*Software and Hardware Co-Design for Low-Power HPC Platforms*”. **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.
13. 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, January 23, 2018.

Posters

1. **Psistakis A.**, Chaix F., Torrellas J. (2023). “*MINOS: Distributed Consistency and Persistency Implementation and Offloading to SmartNICs*”. Poster presented at the **1st ACE Annual Review**, Urbana, Illinois, October 3–5, 2023.
2. **Psistakis A.**, Peristerakis P., Xirouchakis P., Gianioudis M., Kalokairinos G., Chrysos N., Chaix F., Papaefstathiou V., Katevenis M. (2018). “*User-level RDMA with IOMMU Support on ARM Platforms*”. Poster presented at the **14th HiPEAC ACACES**, Advanced Computer Architecture and Compilation for Embedded Systems, 2018.

Invited Talks

1. Latest Academic Research for Composable Memory, **OCP Global Summit 2025**, October 2025.
2. *On-line Incremental Recovery from Node Failures in a Cluster*, **ACE 2025 All Hands Meeting**, May 2025.
3. *Talk on Consistency, Persistency, and Offloading Them into SmartNICs*, **Intel**, February 2023.

Service

- Co-organizer, **Compilers, Architecture, and Parallel Programming (CAP) Seminar**, University of Illinois at Urbana-Champaign (UIUC), Urbana-Champaign, IL, USA, 2021–2023.
- Co-organizer, **1st Graduate Student Conference**, Department of Computer Science, University of Crete, Heraklion, Greece, October 2019.
- Co-organizer, **HiPEAC** student events, HiPEAC Computing Systems Week (CSW), Heraklion, Greece, October 2018.
 - HiPEAC Student Challenge V – Inspiring Futures! The HiPEAC Career Advice
 - Mentoring Session – HiPEAC CSW Autumn 2018

Teaching

Graduate Teaching Assistant

University of Crete (UOC)

Heraklion, Greece

Sept 2017 – Nov 2019

- **Digital Design (CS-120)** – Fall 2017, Fall 2018
- **Computer Organization (CS-225)** – Spring 2018, Spring 2019

Technical Skills

- **Programming Languages:** C, C++, Bash, Verilog, SystemVerilog, Python
- **Architectures:** x86, ARMv8, RISC-V
- **Tools:** Xilinx (Vivado, SDK), Synopsys (VCS)
- **Operating Systems:** Linux, macOS, Windows