

Spyros Pavlatos

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Education

University of Pennsylvania

Aug 2022 – present

PhD in Computer and Information Science

- Advisor: Vincent Liu
- Research on microservices and serverless computing by blending ideas from Distributed Systems, Programming Languages, and Formal Methods.

National Technical University of Athens

Oct 2016 – July 2022

MEng in Electrical and Computer Computer Engineering

- GPA: 9.26/10
- Thesis: [A Test Suite for Model Checking Persistent Memory Programs](#) 📄 Advisor: Kostis Sagonas

Experience

Software Development Engineer Intern

East Palo Alto, CA

Amazon Web Services - DBS Redshift

May 2025 – Aug 2025

- Implemented automatic background conversion of Interleaved Sortkey (ISK) tables.

Telecommunications Engineer

Athens, Greece

White Noise NTUA

2017 – 2019

- Founding member of the space engineering team
- Member of [project Drillsat](#) 📄 and [project Daedalus](#) 📄 for which I designed the telecommunications subsystems and data handling protocols.

Teaching Experience

Teaching Assistant

Philadelphia, PA

University of Pennsylvania

2023 – 2024

- Courses: Software Analysis, Compilers

Teaching Assistant

Athens, Greece

National Technical University of Athens

2020 – 2021

- Courses: Introduction to Programming, Programming Techniques

Projects

λ-trim Debloater

2024 – present

Debloater for Python and serverless applications

- Designed a debloating algorithm that leverages established dynamic analysis techniques and a cost model to optimize serverless applications.
- Implemented the algorithm in a tool that can be used to debloat Python and serverless applications and achieved up to 20% reduction in cold start time and cost when deployed on AWS Lambda.
- Actively maintaining the open-source version of the tool.

MuCache 📄

2022 – 2023

Caching framework for microservices

- Implemented various applications to test and evaluate the proposed framework.
- Verified the correctness of the caching framework with a pen-and-paper proof.

PM-Benchmarks 📄

2021 – 2022

Test suite for model checking persistent memory programs

- Developed a test suite consisting of litmus tests and complex data structures for model checking persistent memory programs under the Px86 memory persistency model.
- Tested the state-of-the-art model checker [GenMC](#) 📄 against the test suite and reported some critical internal bugs in the tool.

Publications

λ-trim: Optimizing Function Initialization in Serverless Applications With Cost-driven Debloating

Spyros Pavlatos, Xuting Liu, Yuhao Liu, Vincent Liu

ASPLOS'25

MuCache: A General Framework for Caching in Microservice Graphs

Haoran Zhang, Konstantinos Kallas, Spyros Pavlatos, Rajeev Alur, Yuhao Liu, Vincent Liu

NSDI'24

Skills

Programming: C/C++, Rust, OCaml, Erlang, Python, Go, Java, JavaScript

Operating Systems / Platforms: Windows, Linux, AWS, GCP

Databases: MySQL, MongoDB, RocksDB, Redis, memcached


Frameworks & Tools: LLVM, OpenMP, MPI, PyTorch, Docker, Kubernetes, frama-c, TLA+, ns-3

Miscellaneous: LaTeX, Git/Github

Honors/awards

- **Soloman M. Swaab Fellowship** - University of Pennsylvania
- **1st Prize in Cansat in Greece 2018** space engineering competition (universities level).
- **IEEEExtreme programming competitions.** Ranked **94/5500** (15.0), **99/3700** (14.0) and **184/4000** (13.0) worldwide.
- **Bronze Medal in the Panhellenic Physics Competition Aristotle 2016.** Ranked 25th overall

Leadership and Outreach

- **Penn CIS PhD Mentorship Program Organizer** (2023-present).
- **Invited Panelist for Penn CIS Visit Days** (2023, 2024, 2025).
- **Computer and Information Science Doctoral Association ([CISDA](#) ).** Served in the Dean's Advisory Board (2022-2023) and as a CISDA chair (2023-2025).

Travel Funding

NSDI 2025 Student Grant	2025
Summer School on Formal Techniques Funding	2023
Programming Languages Mentoring Workshop at PLDI 2022 - Student Grant	2022