DIMITRA GIANTSIDI

Computer Systems Researcher and Engineer

dimitra.giantsidi@gmail.com Google Scholar dimitra-giantsidi-12165b89 dgiantsidi.github.io/ dgiantsidi

EDUCATION

Ph.D. in Computer Science

University of Edinburgh, UK

Sept 2019 – Nov 2024

Thesis: Trustworthy Distributed Data Management Systems, **Microsoft Research PhD Fellow**

Advisor: Prof. Dr. Pramod Bhatotia

- Invented distributed systems for the untrusted cloud infrastructure with increased security properties and performance.
- Leveraged the recent hardware advancements in trusted computing, byte-addressable storage and kernel-bypass networking and SmartNICs.
- **6 paper acceptances (top tier)** and **4 first-author paper acceptances (top tier)**.
- **Awarded a best (first-author) paper nominee at IEEE/IFIP DSN'22 [Rank: A1]** (3 nominees among 49 accepted papers and 262 total submissions).
- **Awarded a best (first-author) paper at Middleware'25 [Rank: A]** (5 nominees among 36 accepted papers and 91 total submissions).

MSc in Computer Science

University of Edinburgh, UK

Sept 2018 – Sept 2019

Highest Honors, **Best Female MSc Thesis Award** [link]

MEng in Computer and Electrical Engineering

National Technical University of Athens, Greece

Sept 2012 – March 2018

Highest Honors (Top 8%), **Top 0.1% in national qualification exams**

SELECTED PUBLICATIONS

Complete list available [here]

- Recipe: : Hardware-Accelerated Replication Protocols.
  Dimitra Giantsidi, *Manos Giortamis*, *Julian Pritzi*, *Maurice Bailleu*, *Manos Kapritsos*, , *Pramod Bhatotia*
  Middleware'25 [Best paper award], **[paper]** **[code]**, Rank: A, Acceptance rate: 38%.
  Created a generic approach to transform existing crash fault tolerant replication protocols to tolerate Byzantine failures in untrusted cloud environments. Recipe achieves a speedup of up to 24× compared to the state-of-the-art Byzantine fault tolerant systems.
- TNIC: A trusted NIC architecture.
  Dimitra Giantsidi, *Julian Pritzi*, *Felix Gust*, *Antonios Katsarakis*, *Atsushi Koshiba*, *Pramod Bhatotia*
  ASPLOS'25 [paper] **[code]**, Rank: A1 [link], Acceptance rate: 20%.
  Created a **trusted NIC architecture** on top of SmartNICs to build high-performance, trustworthy distributed systems for untrusted cloud environments. The system improves distributed systems performance by up to 5× compared to the state-of-the-art, while offering formally-proven security guarantees based on a minimal Trusted Computing Base.
- Flexlog: A shared log for stateful serverless computing.
  Dimitra Giantsidi, *Emmanouil Giortamis*, *Nathaniel Tornow*, *Florin Dinu*, *Pramod Bhatotia*
  ACM HPDC'23 [paper] **[code]**, Rank: A1 [link], Acceptance rate: 18.20%.
  Created from the ground-up a distributed log system for serverless computing that outperforms the state-of-the-art up to 10× offering better flexibility in semantics on top of byte-addressable storage.

EMPLOYMENT

Researcher

Security and Privacy Group, Microsoft Research

Oct 2024–present Cambridge, UK

- Research and implementation of the next-generation secure and reliable storage infrastructure.

Research Intern

Cloud and Infrastructure Security Group, Microsoft Research

May 2024–Aug 2024 Redmond, US

- Designed and built a new record-replay framework for confidential and integrity-preserving LLMs execution.

Research Intern

Confidential Computing Group, Microsoft Research

Sept 2021–Dec 2021 Cambridge, UK

- Invented a new high-performance Key-Value store system for privileged attacks.
- Exceptional throughput results on widely used workloads in Microsoft's private datacenter.

Research Software Engineer

University of Edinburgh

June 2023 – present Edinburgh, UK

- Invented a new trusted NIC architecture for the cloud on top of FPGA-based SmartNICs.
- The system is superior in performance and robustness w.r.t. current networked systems in the cloud.

Software Systems Engineer

Intracom Telecom

Jul 2017 – Jul 2018 Athens, Greece

- Designed and built a resource-aware infrastructure for the cloud-hosted datacenters.
- The system saved energy and cpu resources while company's clients SLAs were met.

ACADEMIC ACTIVITIES

Teaching Assistant and Mentor

University of Edinburgh

Dec 2019 - Mar 2024 Edinburgh, UK

- Selected as the most helpful and responsive assistant in Operating systems course in 2021–2023.

- Treaty: Secure Distributed Transactions.
  Dimitra Giantsidi, *Maurice Bailleu*, *Natacha Crooks*, *Pramod Bhatotia*
  IEEE/IFIP DSN'22 [Best paper nominee] [code], Rank: A1, Acceptance rate: 18.20%.
  Created the **first** distributed transactional storage system in **real hardware** with strong security properties (integrity–confidentiality–freshness).
- Anchor: A Library for Building Secure Persistent Memory Systems.
  Dimitris Stravakakis, ***Dimitra Giantsidi***, *Maurice Bailleu*, *Philip Saendig*, *Shady Issa*, *Pramod Bhatotia*
  SIGMOD'24 [paper] [code], Rank: A1 [link], Acceptance rate: 20%.
  Designed a novel persistent memory (pm) engine that ensures strong security properties for the pm data with confidential and authenticated pm data structures, while preserving crash consistency through a secure logging protocol.
- Avocado: A Secure In-Memory Distributed Storage System.
  Maurice Bailleu, ***Dimitra Giantsidi***, *Vasilis Gavrielatos*, *Le Quoc Do*, *Vijay Nagarajan*, *Pramod Bhatotia*
  USENIX ATC'21 [paper] [code], Rank: A1 [link], Acceptance rate: 23.1%.
  Created a Byzantine Fault tolerant Multi-Reader/Multi-Writer replication protocol on top of Trusted Execution Environments that outperforms the state-of-the-art protocols for 5—64×.
- Advised 6 BSc/MSc students (inspired one of them to join our research team as PhD student).

Reviewer

- Student Mentorship Chair at SOSP'26 [link].
- I served as a reviewer in top-tier systems conferences: USENIX Fast'27, EuroSys'27, Middleware'26, USENIX Fast'25, Middleware'25, SysTex'25, Systor'25, APSys'25, SoCC'24, EuroPar'24, SysTEX'24, EuroSys'23, SoCC'23, WWW'22.
- Web chair at EuroSys'21: designed and build the conference site [link].