# Dimitra Giantsidi

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#### Education

**Ph.D.** in Computer Science (Sept 2019 - present)

University of Edinburgh, UK

Thesis: Hardware-Assisted Distributed Dependable Systems, Microsoft Research PhD Fellow

Advisor: Prof. Dr. Pramod Bhatotia

<u>Summary:</u> Designed distributed systems for the untrusted cloud infrastructure with increased security properties and performance leveraging the recent hardware advancements in trusted computing (Trusted Execution Environments, e.g., Intel SGX, AMD-SEV), storage (byte-addressable storage) and networking (RDMA, direct I/O, SmartNICs). **Completed 4 first-author papers, 2 first-author paper acceptances (top tier) and 1 first-author best paper nominee.** 

**MSc** in Computer Science (Sept 2018 - Aug 2019) *University of Edinburgh, UK* Best Performing Female MSc Thesis Award

MEng in Computer and Electrical Engineering (Sept 2012 - Mar 2018)

National Technical University of Athens (NTUA), Greece

## **Employment**

#### Microsoft Research, Cambridge, UK Sept 2021 - Dec 2021

Research Intern

Developed a new high-performance Key-Value store system that shields against privileged timing attacks on top of the standardised threat model in confidential computing. Built on top Trusted Execution Environments (Intel SGX) and state-of-the-art networking techniques (RDMA).

#### University of Edinburgh, UK June 2023 - present

Research Assistant

Designed and built a Hardware/software co-design of a trusted NIC architecture for robust replication in the cloud. Developed a simple and easily adaptable API for secure networking operations on top of FPGA-based SmartNICs.

#### Intracom Telecom, Athens, Greece Jul 2017 - Jul 2018

Software Systems Engineer

Developed a resource-aware infrastructure for the cloud-hosted data centers that optimises the provider's energy and maintenace costs while meeting clients SLAs. Buildt on top of Intel RDT technologies and Kubernetes.

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#### Honors and Awards

Best paper nominee at DSN'22

Microsoft Research scholarship, 2019

Best Performing Female MSc Thesis Award for MSc thesis, 2019

#### **Publications**

#### **Conference publications:**

A Trusted NIC Architecture: Hardware architecture, networking stack, and its applications in building robust distributed systems protocols

**Under submission** 

Using Modern Cloud Hardware to build Robust and Efficient Replication Protocols for Distributed Data Stores

Under submission

Anchor: Secure Persistent Memory Architecture

Dimitris Stravakakis, Dimitra Giantsidi, Maurice Bailleu, Philip Saendig, Shady Issa, Pramod Bhatotia

SIGMOD'24, Rank: A1

FlexLog: A Shared Log for Stateful Serverless Computing

Dimitra Giantsidi, Emmanouil Giortamis, Nathaniel Tornow, Florin Dinu, Pramod Bhatotia

ACM HPDC'23 [code], Rank: A1, Acceptance rate: 18.20%

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%

Avocado: A Secure In-Memory Distributed Storage System.

Maurice Bailleu, Dimitra Giantsidi, Vasilis Gavrielatos, Le Quoc Do, Vijay Nagarajan, Pramod Bhatotia

USENIX ATC'21, Rank: A1, Acceptance rate: 23.1%

DICER: Diligent Cache Partitioning for Efficient Workload Consolidation

Konstantinos Nikas, Nikela Papadopoulou, Dimitra Giantsidi, Vasileios Karakostas, Georgios Goumas, Nectarios

Koziris

ICPP'19, Rank: A2, Acceptance rate: 20%

#### **Talks**

ACM HPDC'23, Orlando, US

FlexLog: A Shared Log for Stateful Serverless Computing

IEEE/IFIP DSN'22, Baltimore, US *Treaty: Secure Distributed Transactions* 

Third Annual SGX Community Day 2022 (virtual)

USENIX ATC'21 (virtual)

Avocado: A Secure In-Memory Distributed Storage System

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### Teaching experience and Supervision

**Teaching assistant:** Operating systems and Distributed Systems Engineering courses, University of Edinburgh and TU Munich, Dec 2019 - present.

- Operating Systems, University of Edinburgh, Semester 2 (Spring), 2019 2022
- Computer systems lab, Cloud-lab, Advanced systems programming, TU Munich, Winter and Summer Semesters, 2020 2023

BSc/MSc thesis advisor: Supervised 3 BSc and 2 MSc thesis in TU Munich, Dec 2020 - present.

#### Professional activities

Web chair: EuroSys'21

Shadow PC member: EuroSys'23, SoCC'23, WWW'22

### Skills

Languages: C/C++, Python, Bash, Golang, Java, Vitis HLS

**Systems and Tools**: RocksDB and folly library, TEEs (Intel SGX, OpenEnclave SDK, AMD-sev), direct network I/O (DPDK, RDMA,Alveo SmartNICs), SPDK, Intel RDT, LLVM, collectd, POSIX/Unix, OpenMP and MPI, gRPC

Virtualization: KVM, Qemu/Libvirt, Docker, Kubernetes

Distributed Programming: Hadoop MapReduce, Socket and RPC programming

#### References

#### Prof. Dr. Pramod Bhatotia

TU Munich, Germany

Email: pramod.bhatotia@cit.tum.de

#### Prof. Dr. Natacha Crooks

UC Berkeley, USA

Email: ncrooks@berkeley.edu

#### Prof. Dr. Manos Kapritsos

University of Michigan, USA Email: manosk@umich.edu

#### Dr. Florin Dinu

Huawei Research Center Munich, Germany

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