Dimitra Giantsidi

Informatics Forum 1.05, University of Edinburgh
10 Crichton Street, EH8 9AB
Edinburgh, UK

Email: dimitra.giantsidi@gmail.com
Homepage: https://dgiantsidi.github.io/
GitHub: https://github.com/dgiantsidi

RESEARCH INTERESTS

I like to build robust and efficient distributed systems!

My research lies in the field of dependability in distributed systems with focus on the fault tolerance and security. Exploring the applications of modern hardware, such as Trusted Execution Environments and Direct I/O for networking and storage, my work aims to increase the security and performance of widely adopted distributed systems. As such, I have build a few intersting systems: a secure distributed transactional store on top of Intel SGX, RDMA and LSM KVs, a shielded direct I/O network library for robust replication and a shared log system for serverless computing infrastucture on top of byte-addressable storage.

My current work focuses on the design of a trusted NIC architecture for large-scale distributed systems in untrusted cloud environments.

EMPLOYMENT

Microsoft Research, Cambridge, UK (2021)
Research Intern
· Design of KVs for timing attacks using RDMA and Intel SGX technologies

Intracom Telecom, Athens, Greece (2017-2018)
Systems Engineer
· Performance and energy optimization of NFV services

EDUCATION

PhD in Computer Science (2019-present)
University of Edinburgh, UK
Thesis: Hardware-Assisted Distributed Dependable Systems, **Microsoft Research PhD Fellow**
Advisor: Prof. Dr. Pramod Bhatotia

MSc in Computer Science (2019)
University of Edinburgh, UK
Best Performing Female MSc Thesis Award

MEng in Computer and Electrical Engineering (2012-2018)
National Technical University of Athens (NTUA), Greece

TECHNICAL SKILLS

Programming Languages	C/C++, Python, Bash, Golang, Java, Vitis HLS
Systems Programming	RocksDB and folly libraries, TEEs (Intel SGX, OpenEnclave SDK, AMD-sev), direct network I/O (DPDK, RDMA, Alveo SmartNICs), SPDK, Intel RDT/CAT, LLVM, collectd, POSIX/Unix, OpenMP and MPI, gRPC
Virtualization	KVM, Qemu/Libvirt, Docker, Kubernetes
Version Control	Git
Distributed Programming	Hadoop MapReduce, Socket and RPC programming

PUBLICATIONS

Anchor: Secure Persistent Memory Architecture.
Dimitris Stravakakis, Dimitra Giantsidi, Maurice Bailleu, Philip Saendig, Shady Issa, Pramod Bhatotia.
SIGMOD'24

FlexLog: A Shared Log for Stateful Serverless Computing.
Dimitra Giantsidi, Emmanouil Giortamis, Nathaniel Tornow, Florin Dinu, Pramod Bhatotia.
ACM HPDC'23

Treaty: Secure Distributed Transactions.
Dimitra Giantsidi, Maurice Bailleu, Natacha Crooks, Pramod Bhatotia.
IEEE/IFIP DSN'22 (Best paper nominee)

Avocado: A Secure In-Memory Distributed Storage System.
Maurice Bailleu, Dimitra Giantsidi, Vasilis Gavrielatos, Le Quoc Do, Vijay Nagarajan, Pramod Bhatotia.
USENIX ATC'21

DICER: Diligent Cache Partitioning for Efficient Workload Consolidation.
Konstantinos Nikas, Nikela Papadopoulou, Dimitra Giantsidi, Vasileios Karakostas, Georgios Goumas, Nectarios Koziris.
ICPP'19

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.

ACADEMIC EXPERIENCE

University of Edinburgh, UK (2023-present)
Research Assistant
· Hardware/software co-design of a trusted NIC architecture based on RDMA protocol

Unversity of Edinburgh, UK and TUM, Germany (2019 - present)
Thesis advisor and Teaching Assistant
· Operating Systems, Distributed Computing, Parallel Architectures, Object-oriented Programming
· Supervised five BSc/MSc students on their BSc Thesis on Distributed and Networking systems

EuroSys'21
Web chair

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

HONORS AND AWARDS

Best paper nominee at DSN'22
Microsoft Research scholarship, 2019
Best Performing Female MSc Thesis Award for MSc thesis, 2019