

Dimitrios (Dimitris) Mouris

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Applied cryptography researcher motivated by the impact of cryptography in contemporary society and in humanity.

Research & Work Experience

University of Delaware

RESEARCH ASSISTANT

Applied Cryptography • Zero-knowledge Proofs • Homomorphic Encryption • Secure Multiparty Computation

Newark, DE, USA

February 2019 – Now

Meta Inc.

PART-TIME STUDENT RESEARCHER (REMOTE)

RESEARCH ENGINEER INTERN

Development of privacy-enhancing solutions that solve real-world problems such as private attribution and privacy-preserving personalization. Research and implementation of *Delegated Private Matching for Compute*. [f Blogpost](#), [🔒 Private-ID](#)

Bellevue, WA, USA & Remote

September 2022 – December 2022

June 2022 – August 2022

Amazon Web Services (AWS)

SOFTWARE DEVELOPMENT ENGINEER (SDE) INTERN

Development of Role-Based Access Control (RBAC) for Amazon Redshift to manage permissions and security privileges.

Palo Alto, CA, USA

June 2021 – August 2021

Athena Research & Innovation Center

RESEARCH ASSISTANT & SOFTWARE ENGINEER

My Health My Data (MHMD) project: Design and implementation of an end-to-end framework for privacy-preserving medical data analytics (i.e., histograms and decision trees) using secure multi-party computation (MPC). [🔒 smpc-analytics](#)

Athens, Greece

September 2017 – December 2018

Education

Department of Electrical & Computer Engineering, University of Delaware

DOCTOR OF PHILOSOPHY (PHD) IN ELECTRICAL AND COMPUTER ENGINEERING

- Research Topic: *Private and Verifiable Computation*
- My research focuses on privacy-preserving technologies and on building efficient solutions that respect data privacy using cryptographic techniques such as *zero-knowledge proofs*, *homomorphic encryption*, and *secure multiparty computation*.

Newark, DE, USA

February 2019 – Now

Advisor: Nektarios G. Tsoutsos

Department of Informatics & Telecommunications, University of Athens

MASTER OF SCIENCE (MSC) IN COMPUTER SCIENCE

The *Computer Systems (Software and Hardware)* specialization covers advanced topics in areas such as computer security & architecture, operating & distributed systems, programming languages, algorithms & data structures.

Athens, Greece

October 2016 – September 2018

Department of Informatics & Telecommunications, University of Athens

BACHELOR OF SCIENCE (BSc) IN COMPUTER SCIENCE

Athens, Greece

October 2012 – September 2016

Publications (Selected)

JOURNAL ARTICLES

- C. Gouert, **D. Mouris**, and N. Tsoutsos. “**SoK: New Insights into Fully Homomorphic Encryption Libraries via Standardized Benchmarks**” in *Proc. Priv. Enhancing Technol. (PoPETs)*, [📄](#) vol. 2023, no. 3, pp. 154–172, [🔒](#) 2023
- **D. Mouris**, C. Gouert, and N. Tsoutsos. “**Privacy-Preserving IP Verification**” in *IEEE Trans. on Computer-Aided Design of Integrated Circuits and Systems (TCAD)*, [📄](#) vol. 41, no. 7, pp. 2010–2023 2021
- **D. Mouris** and N. Tsoutsos. “**Zilch: A Framework for Deploying Transparent Zero-Knowledge Proofs**” in *IEEE Trans. on Information Forensics and Security (TIFS)*, [📄](#) vol. 16, pp. 3269–3284, [🔒](#) 2021
- **D. Mouris**, N. Tsoutsos, and M. Maniatakis. “**TERMinator suite: Benchmarking Privacy-Preserving Architectures**” in *IEEE Computer Architecture Letters*, [📄](#) vol. 17, no. 2, pp. 122–125, [🔒](#) 2018

CONFERENCE PAPERS

- **D. Mouris**, C. Gouert, and N. Tsoutsos. “**MPloC: Privacy-Preserving IP Verification using Logic Locking and Secure Multiparty Computation**” in *IEEE 29th Internat. Symp. on On-Line Testing and Robust System Design (IOLTS)*, [📄](#), [🔒](#) 2023
- **D. Mouris**, C. Gouert, and N. Tsoutsos. “**zk-Sherlock: Exposing Hardware Trojans in Zero-Knowledge**” in *IEEE Computer Society Annual Symposium on VLSI (ISVLSI)*, [📄](#) pp. 170–175 2022
- **D. Mouris** and N. Tsoutsos. “**Pythia: Intellectual Property Verification in Zero-Knowledge**” in *ACM/IEEE 57th Design Automation Conference (DAC)*, [📄](#) pp. 1–6 2020

- P. Cronin, C. Gouert, **D. Mouris**, N. Tsoutsos, and C. Yang. “**Covert Data Exfiltration Using Light and Power Channels.**” in *37th Internat. Conf. on Computer Design (ICCD)*, pp. 301–304 2019

OPEN-ACCESS ARCHIVES

- **D. Mouris**, P. Sarkar, and N. Tsoutsos. “**PLASMA: Private, Lightweight Aggregated Statistics against Malicious Adversaries with Full Security**” in *Cryptology ePrint Arch.*, 2023/080, [IETF - CFRG](#), [🔗](#) 2023
- **D. Mouris**, D. Masny, N. Trieu, S. Sengupta, P. Buddhavarapu, and B. Case. “**Delegated Private Matching for Compute**” in *Cryptology ePrint Arch.*, 2023/012, [f Blogpost](#), [🔗](#) 2023

THESES

- A. Giannopoulos and **D. Mouris**. “**Privacy preserving medical data analytics using secure multi party computation. An end-to-end use case**” in *M.Sc. Thesis*, Supervisors: Y. Ioannidis and M. Garofalakis, [📄](#), [🔗](#) 2018

Technical Skills

Programming Paradigms	Procedural 📄, Object Oriented 📄, Logic 📄, Functional 📄		
Programming Languages	Rust 📄, C 📄, C++ 📄, Java 📄, Python 📄, Go 📄, Haskell 📄		
Parallel Programming	POSIX processes & threads 📄, MPI 📄, Open MP 📄		
Assembly Languages	x86/x64 📄, MIPS 📄	Markup & Web Languages	NodeJS 📄, JS 📄, HTML 📄
Scripting	Z shell 📄, Bash 📄	Database Systems	SQL 📄, MySQL 📄
Version Control	Git 📄, Mercurial 📄	Languages	Greek (native), English (fluent)

Teaching Assistant

UNIVERSITY OF DELAWARE

Reverse Engineering & Penetration Testing ([Fall 2021, 2022](#)), Microprocessor Systems ([Fall 2020](#)), Applied Cryptography ([Spring 2020, 2021](#)), Secure Software Design ([Spring 2020, 2021](#)), Embedded Systems Security ([Fall 2019 – 2021](#))

UNIVERSITY OF ATHENS

System Programming ([Spring 2017](#)), Logic Prog. ([Spring 2017](#)), Intro to Prog. ([Fall 2014 – 2017](#)), Operating Systems ([Fall 2016](#))

Honors & Awards

2023	Conference Stipend , Travel stipend for Privacy Enhancing Technologies Symposium (PETS)	<i>Lausanne</i>
2021	Student Conference Grant , Registration for ACM Symp. on Computer and Com. Security (CCS)	<i>Virtual</i>
2021	1st for outstanding research presentation , IEEE Reliable and Resilient Digital Manufacturing	<i>Virtual</i>
2020	Scholarship , Outstanding Academic Performance Scholarship, from the Gerondelis Foundation	<i>Grant \$5,000</i>
2020	DAC Young Fellow Program , 57 th Design Automation Conference, July 20-24	<i>Virtual</i>
2016	Scholarship , Programming Languages Mentoring Workshop (PLMW) at SPLASH 2016, 10/30-11/4	<i>Amsterdam</i>

Professional Service

REVIEWER

Privacy Enhancing Technologies ([2023](#)), CSAW Applied Research ([2019 – 2022](#)), IEEE Access ([2020, 2022](#)), Elsevier FGCS ([2020](#))

EXTERNAL/SUB-REVIEWER

ACM TACO ([2021 – 2022](#)), DAC ([2020 – 2021](#)), AIHC ([2019](#)), AsianHOST ([2020](#)), GLSVLSI ([2023](#)), IEEE Access ([2019](#)), IEEE Computer ([2019](#)), IEEE ESL ([2019](#)), IEEE HOST ([2019, 2023](#)), IEEE ICCD ([2019](#)), IEEE IOLTS ([2023](#)), IEEE ISVLSI ([2019](#)), IEEE MICRO ([2019 – 2023](#)), IEEE TCAD ([2019, 2022, 2023](#)), IEEE TETC ([2019](#)), IEEE TIFS ([2019](#)), IEEE DSN ([2020](#)), VLSI-SoC ([2019](#)) Springer JETT ([2019](#))

Community Service

BlueHens Capture The Flag (CTF) Competition - UDCTF

Global Event

GLOBAL CO-LEAD

2021, 2022

Challenge developer and organizer for research and educational oriented CTF competition.

Event on ctftime.org/event/1298

CSAW Cybersecurity Games & Conference – Embedded Security Challenge

Global Event

GLOBAL CO-LEAD

[🔗](#) 2020, [🔗](#) 2021, [🔗](#) 2022, [🔗](#) 2023

Challenge developer and organizer for research-oriented embedded systems hacking competition.

CTF Mentoring

Newark, DE, USA

MENTOR

2019 – Now

Cryptography, binary exploitation, and reverse engineering mentoring for the University of Delaware's *Blue Hens* team.