

Apostolos Mavrogiannakis

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Research Interests

Applied cryptography, cloud & database security, query processing on encrypted data, encrypted search, oblivious RAMs, oblivious relational databases, large-scale secure data management, and multi-party computation.

Education

University of California, Santa Cruz *Sept 2022 – Present*

Ph.D. in Computer Science – *Research Topic:* Scalable & Secure Computation *Advisor:* Ioannis Demertzis

University of Crete

Sept 2016 – 2022

BSc in Computer Science – *Thesis:* Graph Summarization, *Advisor:* Ioannis G. Tollis.

Publications

OBLIVIATOR: Oblivious Parallel Joins and other Operators in Shared Memory Environments (USENIX Security '25)

A. Mavrogiannakis, X. Wang, I. Demertzis, D. Papadopoulos, M. Garofalakis

Scalable oblivious databases that are asymptotically and experimentally superior, demonstrated for the first time with datasets exceeding 140 GB.

Awards

Outstanding Academic Performance Scholarship, from Gerondelis Foundation Sep 2023

Service/External Reviewer

Journal Reviewing: TDSC (2024)

Conference External Reviewer: USENIX Security Symposium (2024, 2025), IEEE Symposium on Security and Privacy (2024, 2025), ACM CCS (2023, 2024), NDSS (2024), SIGMOD (2024, 2025), ASIACCS (2023, 2024), ICDE (2024, 2025)

Work Experience

Research Assistant *working on oblivious databases and systems* with Prof. Ioannis Demertzis Sept 2020 – Present

Teaching Assistant: Algorithms and Data structures (Fall'24, Winter'24), Introduction to Modern Cryptography (Spring'23, Fall'25), C Programming Language (Winter'23, Fall'23, Spring'24)

Talks & Presentations

- “Scalable and Oblivious Databases Systems,” Advancement to Candidacy, UC Santa Cruz, September 2025.
- “OBLIVIATOR - Oblivious Parallel Joins and other Operators in Shared Memory Environments” USENIX Security, August 2025.
- “Oblivious Parallel Joins and other operators” UC Santa Cruz Security Seminar, February 2025.

Technical Skills

Programming Languages: Python, C/C++, Java

Cryptographic Libraries: OpenSSL, libsodium

Systems & Tools: Docker, Git, Linux

Areas of Expertise: Cryptography, Distributed Systems, Privacy-Preserving Databases, System Security

Languages

English (Proficiency), Greek (Native proficiency)