



Antonis Papaioannou
Senior Database Researcher
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SUMMARY

Senior Database Researcher with 10+ years of experience in data management systems and distributed systems. Currently developing GaussDB at Huawei Research, focusing on cloud-native analytics and HTAP workloads. PhD in Computer Science with 20+ peer-reviewed publications and multiple awards including Huawei's Future Star Award (2023). Proven track record bridging academic research with industrial applications in systems like Apache Cassandra, MongoDB, Redis, Apache Flink and RocksDB.

AWARDS AND RECOGNITION

- **Presidents Award - Significant Business Contribution**, Huawei Research, 2024
- **Future Star Award**, Huawei Research, 2023
- **Database Key Technology Breakthrough Team Award**, Huawei Research, 2023
- Grand Challenge Award, ACM DEBS, 2022
- Best Poster Award, ACM EuroSys, 2022
- Recipient of multiple competitive fellowships including the Hellenic Foundation for Research and Innovation PhD Scholarship and Maria Michail Manasaki Doctoral Fellowship.

PROFESSIONAL EXPERIENCE

SENIOR DATABASE RESEARCHER

Sep 2022 – Present

HUAWEI RESEARCH, EDINBURGH, UK

Developing core GaussDB features serving enterprise and Cloud clients globally:

- Designed and implemented query segmentation improving scheduling and resource efficiency in the cloud-native analytics platform.
- Integrated Iterative Dynamic Programming (IDP) into the query optimizer boosting performance for complex queries.
- Led the development of core features for Incremental View Maintenance (IVM) to enable low-latency, delta-based updates to materialized views.
- Recognized with Future Star Award (2023) and contributed to two team breakthrough awards

POSTDOCTORAL RESEARCHER

Dec 2021 – Aug 2022

INFORMATION SYSTEMS LABORATORY (ISL), ICS-FORTH

- Designed adaptation techniques in large-scale distributed data stores and stream-processing systems.
- Developed elasticity and performance optimization mechanisms used in Apache Cassandra, MongoDB, Redis, RocksDB, Apache Flink, and Apache Samza.

RESEARCH ASSISTANT

Nov 2011 – Nov 2021

ICS-FORTH

- *Information Systems Laboratory (ISL)*, Nov. 2016 – Nov. 2021: Designed performance and scalability improvements for distributed storage systems.
- *Computer Architecture and VLSI Systems (CARV) Laboratory*, Nov. 2012 – Oct. 2013: Designed and implemented frameworks for evaluating distributed application deployments in multi-cloud platforms; deployed and maintained backend database infrastructure for cloud-based social networks.
- *Distributed Computing Systems (DCS) Laboratory*, Nov. 2011 – Oct. 2012: Studied the impact of social media on website performance and security.

RESEARCH ASSOCIATE

Nov 2013 – Nov 2014

Developed a platform for resource performance classification in the Cloud; identify performance improvements in multi-Cloud deployments leveraging execution history.

SYSTEMS & NETWORK ADMINISTRATOR

Mar 2018 – Dec 2018

HELLENIC ARMY, RESEARCH AND INFORMATION CORPS

Managed critical infrastructure hosting military applications; configured Dell PowerEdge VRTX servers; redesigned secure network topology for classified information systems

SOFTWARE DEVELOPER & DATABASE ADMINISTRATOR

Apr 2012 – Sep 2012

HELP AT HOME, HERAKLION, CRETE, GREECE

Designed customer data models and developed employee task assignment application

DATABASE ADMINISTRATOR

Sept 2009 – Apr 2010

HANAPTIXI, HERAKLION, CRETE, GREECE

Designed customer data models and developed employee task assignment application. Responsible for database infrastructure, maintenance, tuning, data backup and replication

SELECTED RESEARCH PROJECTS

- StreamStore (2020–2021) – Elastic, scalable, fault-tolerant, stateful stream-processing platform.
- EVOLVE (2019–2021) – HPC + Big Data integration for large-scale analytics in multiple domains.
- PaaSage (2012–2016) – Multi-cloud deployment & optimization framework.

SELECTED PUBLICATIONS

Selected publications from 20+ peer-reviewed papers:

- S. Kalogerakis, **A. Papaioannou**, and K. Magoutis, Efficient Processing of High-Volume Tick Data with Apache Flink for the DEBS 2022 Grand Challenge, in the *16th ACM International Conference on Distributed and Event-Based Systems*, 2022 (**Grand Challenge Audience Award**)
- **A. Papaioannou** and K. Magoutis, Amoeba: Aligning Stream Processing Operators with Externally-Managed State, in the *14th IEEE/ACM International Conference on Utility and Cloud Computing*, 2021
- **A. Papaioannou** and K. Magoutis, Addressing the read-performance impact of reconfigurations in replicated key-value stores, in the *IEEE Transactions on Parallel and Distributed Systems (TPDS)*, 2021
- **A. Papaioannou** and K. Magoutis, Replica-group leadership change as a performance enhancing mechanism in NoSQL data stores, *38th IEEE International Conference on Distributed Computing Systems (ICDCS)*, 2018
- **A. Papaioannou** and K. Magoutis, Incremental elasticity for NoSQL data stores, in the *36th IEEE International Symposium on Reliable Distributed Systems (SRDS)*, 2017
- **A. Papaioannou** and K. Magoutis, Streamstore: Aligning Stream-processing Systems with Externally-Managed State, in the *7th ACM SIGOPS European Conference on Computer Systems (EuroSys'22)*, Rennes, France, April 2022. **Best poster award!**

Full list: [Google Scholar](#) / [Publications Page](#)

PROFESSIONAL ACTIVITIES

- Organizer, "Next-Generation Data Management Systems" industry event, EDBT 2025, Barcelona
- Shadow Program Committee Member, EuroSys 2020
- Lead Organizer, Career Fair events, University of Crete, 2021
- Reviewer: DAIS 2022, CCGrid 2014, Euro-Par 2013

TEACHING EXPERIENCE

TEACHING ASSISTANT ,COMPUTER SCIENCE DEPARTMENT, UNIVERSITY OF CRETE

2010-2021

Key courses: Operating Systems, Modern Topics in Scalable Storage Systems, Data Structures, Computer Networks, Web Programming

EDUCATION

PHD IN COMPUTER SCIENCE UNIVERSITY OF CRETE, GREECE

Nov 2021

Dissertation: Efficient adaptation mechanisms for distributed data stores

Advisor: Prof. Kostas Magoutis

M.Sc. IN COMPUTER SCIENCE UNIVERSITY OF CRETE, GREECE

Nov 2013

GPA: 9.21/10.0

Major: Parallel and Distributed Systems, Minor: Information Systems

B.Sc. IN COMPUTER SCIENCE UNIVERSITY OF CRETE, GREECE

Jun 2010

GPA: 7.21/10.0