

Dimitris Tsitsigkos

Software Engineer

 [dtsitsigkos](#) |  [dtsitsigkos.github.io](#) |  [DBLP](#) |  [Google Scholar](#) |  [dtsitsigkos](#)
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SUMMARY

Software engineer and researcher focused on data management and parallel computing, with a strong background in data processing, indexing, and query optimization. Experienced in C++, Java, and Python, developing algorithms and frameworks for high-performance data systems. Looking to work in a challenging environment where I can apply my skills and continue developing as part of an engineering team.

WORK EXPERIENCE

Archimedes unit of Athena Research Center, Athens, Greece

Feb 2025 - present

Postdoctoral Researcher

- Member of the data science team, focusing on multi-dimensional and vector data.
- Designing and implementing indexing and search methods for multi-dimensional and vector data.

Dept. of Computer Science & Engineering, Univ. of Ioannina, Greece

Jan 2024 – Dec 2024

Doctoral Researcher

Participated in the Greek funding project [MESA](#): In-memory Spatial Analytics Made Scalable

- Implemented novel parallel and non-parallel index structures for spatial queries, including spatial join, range queries, and k-NN.
- Contributed to the design and development of a prototype distributed spatial data management framework using MPI and OpenMP.

Information Management Systems Institute, Athens, Greece

Dec 2012 – Dec 2023

Software Engineer

Participated in several Greek and European funding projects, including:

- [MORE](#): Management of Real-time Energy data.
(Oct 2020 – Dec 2023)
 - Developed a continuous evaluation module for edge-based sliding-window aggregations in Java.
 - Built parallel and distributed pattern extraction methods using Python and Dask, improving processing efficiency.
- [Amnesia](#): A Powerful Data Anonymization Platform.
(Aug 2015 – Sep 2020)
 - Designed and built the framework from scratch as the lead software engineer.
- [MoDisSENSE](#): A Distributed Spatio-Temporal and Textual Processing Platform for Social.
(Dec 2012 - Jul 2015)
 - Engineered scalable algorithms for POI discovery and trajectory reconstruction using Hadoop, HBase, and PostGIS.
 - Designed and implemented web services supporting POI discovery and recommendation.

Institute of CS, Johannes Gutenberg University Mainz, Germany

May 2022 – Jul 2022

Research Visitor

- PhD internship at the Institute of Computer Science with Professor Panagiotis Bouros, focusing on spatial joins.

Hellenic Army Information Technology Support Center, Athens, Greece

Apr 2017 – Nov 2018

Software Engineer

- Maintain and update code for multiple Java applications, while developing new features.

AWARDS

3rd place - [Future of Database Programming Contest](#) (March 2025, Athens).

EDUCATION

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| Ph.D., Computer Science Department of Computer Science & Engineering, University of Ioannina <i>Thesis: In-memory Indexing for Parallel Processing of Single and Multi-Dimensional Queries</i> | Jul 2019 – Dec 2024 |
| M.Sc., Computing Systems: Software and Hardware, Computer Science Department of Informatics and Telecommunications, University of Athens <i>Thesis: Complex Event Processing (CEP) for Intrusion Detection</i> | Nov 2012 – Sep 2016 |
| B.Sc., Computer Science Department of Informatics and Telecommunications, University of Athens <i>Thesis: Clustering Wikipedia resources</i> | Sep 2006 – Jun 2012 |

TECHNICAL SKILLS

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| Languages | C, C++, Java, Python |
| Databases | MySQL, PostgreSQL, PostGIS, HBase |
| Parallel & Distributed Systems | Hadoop, Spark, Dask, OpenMP, SIMD, MPI |
| Frameworks | Spring |
| Web Development | JavaScript, JSP, JSF, PHP |
| Operating Systems | Ubuntu, Microsoft Windows, macOS |

ACADEMIC SERVICE

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| Member of Program Committee | TSAS 2023, ICDE 2026, IEEE BigData 2025 |
| External Reviewer | ICDE 2019-2025, VLDB 2019-2023, SIGMOD 2020, SIGSPATIAL 2020-2023, EDBT 2021-2025, ICDM 2025 |

SELECTED PUBLICATIONS

Dimitrios Tsitsigkos, Panagiotis Bouros, Konstantinos Lampropoulos, Nikos Mamoulis, and Manolis Terrovitis (2024). “Two-Layer Space-Oriented Partitioning for Non-Point Data”. In: *IEEE Transactions on Knowledge and Data Engineering (TKDE)*.

Panagiotis Bouros, Nikos Mamoulis, Dimitrios Tsitsigkos, and Manolis Terrovitis (2021). “In-Memory Interval Joins”. In: *International Journal on Very Large Databases (VLDB J.)*

Dimitrios Tsitsigkos, Konstantinos Lampropoulos, Panagiotis Bouros, Nikos Mamoulis, and Manolis Terrovitis (2021). “A Two-layer Partitioning for Non-point Spatial Data”. In: *IEEE International Conference on Data Engineering, (ICDE)*.

Dimitrios Tsitsigkos, Panagiotis Bouros, Nikos Mamoulis, and Manolis Terrovitis (2019). “Parallel In-Memory Evaluation of Spatial Joins”. In: *ACM International Conference on Advances in Geographic Information Systems (SIGSPATIAL)*.

OTHER

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| Languages | Greek (native), English (Advanced) |
| Volunteer | European Data Forum 2014, EDBT/ICDT 2023 Joint Conference, 6th ACM Europe Summer School on Data Science 2025, HDMS 2025. |