

# Dimitris Tsitsigkos

## Software Engineer

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

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Software Engineer and Researcher specializing in data management and parallel computing. Experienced in designing and implementing in-memory indexing techniques that accelerate query performance for single- and multi-dimensional data. Skilled in building high-performance data systems and algorithms using C++, Java, and Python, with hands-on experience in frameworks such as OpenMP, Dask, and Spark. Aiming to contribute to teams focused on building high-quality, efficient software systems at scale.

## WORK EXPERIENCE

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**Archimedes unit of Athena Research Center, Athens, Greece**

Feb 2025 - present

### Postdoctoral Researcher

- Member of the [Data Science and Engineering team](#), focusing on multi-dimensional and vector data.
- Designing and implementing indexing techniques to enhance query performance 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

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

# EDUCATION

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

# 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

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Dimitrios Tsitsigkos, Achilleas Michalopoulos, Nikos Mamoulis, and Manolis Terrovitis (2026). “B<sup>S</sup>-tree: A gapped data-parallel B-tree”. In: *IEEE International Conference on Data Engineering, (ICDE)*.

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.