

## CURRICULUM VITAE

TIAKAS ELEFThERIOS, MSc, PhD



**Department:** *Accounting and Information Systems – International Hellenic University (IHU)*

**Position:** *Assistant Professor*

**Phone Number:** 2310013770

**Email:** [tiakas@accis.ihu.gr](mailto:tiakas@accis.ihu.gr)

### Academic Degrees

#### *Undergraduate level*

- B.Sc. Diploma in Mathematics, Department of Mathematics, AUTH.
- B.Sc. Diploma in Computer Science, Department of Informatics, AUTH.

#### *Postgraduate level*

- M.Sc. Diploma in Computer Science with focus on Information Systems (CSIS), Department of Informatics, AUTH.
- Ph.D. Diploma, Department of Informatics, AUTH.

### Current Position

Academic staff, Department of Accounting and Information Systems, International Hellenic University (IHU)

### Taught Courses

- "Databases", Undergraduate course, Department of Accounting and Information Systems, IHU.
- "Introduction to Information Systems", Undergraduate course, Department of Accounting and Information Systems, IHU.
- "Analysis and Design of Information Systems", Undergraduate course, Department of Accounting and Information Systems, IHU.
- "Databases and Information Systems", Postgraduate course, Department of Accounting and Information Systems, IHU.
- "Databases", Interdisciplinary postgraduate course, Departments of Informatics and Economics, AUTH.
- "Advanced Topics in Databases", Postgraduate course, Department of Informatics, AUTH.

## **Former Positions / Administrative Experience**

- Laboratory Teaching Staff, Department of Informatics, AUTH **(2017-2022)**
- Teacher of Mathematics of Secondary Education **(2004-2017)**
- Educator of Teachers of Secondary Education **(2007-2009)**
- Freelancer (Teacher of Mathematics-Informatics in Private Education, Computer Programmer) **(1993-2004)**

## **Academic Experience**

### **Teaching in Undergraduate Courses**

Teaching experience in the **Department of Accounting and Information Systems IHU** for the following courses:

- **(2022-2023) "Databases"**, 3<sup>rd</sup> semester
- **(2022-2023) "Introduction to Information Systems"**, 2<sup>nd</sup> semester
- **(2022-2023) "Analysis and Design of Information Systems"**, 4<sup>th</sup> semester

Teaching experience in the **Department of Informatics AUTH** for the following courses:

- **(2013-2022) "Databases"**, 5<sup>th</sup> semester
- **(2016-2022) "Data Structures"**, 2<sup>nd</sup> semester
- **(2017-2022) "Algorithms"**, 4<sup>th</sup> semester
- **(2017-2022) "Discrete Mathematics"**, 1<sup>st</sup> semester
- **(2017-2020) "Operating Systems"**, 5<sup>th</sup> semester
- **(2016-2017) "Basic Programming Principles"**, 1<sup>st</sup> semester

### **Teaching in Postgraduate Courses**

Teaching experience in the **Department of Accounting and Information Systems IHU** for the following course:

- **(2023) "Databases and Information Systems"**, Postgraduate Studies Program "Financial Management, Accounting and Information Systems"

Teaching experience in the **Department of Informatics AUTH** for the following courses:

- **(2018-2023) "Databases"**, Interdisciplinary Postgraduate Studies Program "Management and Information Systems"
- **(2018-2023) "Advanced Topics in Databases"**, Postgraduate Studies Program "Data and Web Science"
- **(2016-2018) "Databases and Data mining"**, Interdisciplinary Postgraduate Studies Program "Informatics and Management"
- **(2016-2018) "Spatial and Multimedia Databases"**, Postgraduate Studies Program "Information and Communication Technologies"

- **(2014-2015) “Advanced Data Indexing”**, Postgraduate Studies Program “Information and Communication Technologies”

### **Professional Experience**

- **1993-2004:** Teacher of Mathematics and Informatics in Private Education Institutes and Private Schools.
- **1993-2003:** Computer Programmer/Developer in Logica Computers, Thessaloniki.
- **2000-2004:** Computer Programmer/Developer in TreeSoft Software Company, Alexandroupolis.
- **1998-2002:** Computer Programmer/Developer in Jeronimo Groovy Radio Station, Athens.

### **Academic Research**

My research work has been published in journals, conference proceedings, books, and book chapters, and received over 770 citations (cross-references) from other scientific publications (according to google scholar, with h-index:12 and i10-index:15)

### **Bsc - Msc Dissertations/Theses Supervision**

I have supervised 3 postgraduate theses and 5 theses of the Department of Informatics AUTH. Currently, I am the supervisor of 2 postgraduate theses of the Department of Informatics AUTH, and 1 thesis of the Department of Accounting and Information Systems IHU.

### **Participation in Research Projects/Programs/etc.**

- **2022-2023:** Participation in project (ID: 97424): Interdisciplinary Postgraduate Studies Program “Management and Information Systems”, Special Account for Research Funds, AUTH.
- **2021-2023:** Participation in project (ID: 97306): Postgraduate Studies Program “Data and Web Science”, Special Account for Research Funds, AUTH.
- **2017-2022:** Participation in project (ID.: 91875): Interdisciplinary Postgraduate Studies Program “Informatics and Management”, Special Account for Research Funds, AUTH.
- **2022:** Participation in research project (ID: 71963): “Intelligent Maintenance Platform for production equipment in the factory of the future based on a combination of advanced prediction and fault detection models”, Special Account for Research Funds, AUTH.
- **2016-2020:** Participation in project (ID: 91877): Postgraduate Studies Program “Information and Communication Technologies”, Special Account for

Research Funds, AUTH.

- **2019:** Participation in research project (ID: 96827): "Anomaly detection in Industry 4.0", Special Account for Research Funds, AUTH.
- **2015:** Participation in project (ID: 21455): "Services to connect undergraduate and graduate students with the market", Special Account for Research Funds, AUTH.
- **2015:** Participation in project (ID: 90410): "15<sup>th</sup> International Conference on Web Information System Engineering (WISE 2014)", Special Account for Research Funds, AUTH.
- **2014:** Participation in project (ID: 89663): "26<sup>th</sup> International Conference on Advanced Information Systems Engineering (CAISE 2014)", Special Account for Research Funds, AUTH.
- **2013-2014:** Participation in project (ID: 89503): "14<sup>th</sup> International Conference of Engineering Applications of Neural Networks (EANN)", Special Account for Research Funds, AUTH.
- **2009-2013:** Participation in the four-year European Research Project: "FPS COST Action FP0804, Forest Management Decision Support Systems" (FORSYS 2009-2013).
- **2012:** Participation in research project: "3DLife-EMC2" in the area of Media Computing & Communication and in cooperation with Information Technologies Institute (ITI).
- **2011-2012:** Participation in research project for the promotion of the exchange and scientific cooperation between Greece and Germany: IKYDA (IKY-DAAD).
- **2003-2004:** Participation in research project: "Enhancing Computer Studies at the Department of Applied Informatics, University of Macedonia of Economic and Social Sciences".
- **2003:** Participation in research project: "ITM", funded by the European Union in collaboration with the Forest Research Institute of Thessaloniki and the University of Vienna (BOKU).

#### **Publications in peer-reviewed Journals**

1. Nikolaos Pliakis, **Eleftherios Tiakas**, Yannis Manolopoulos. "Indexing and progressive top-k similarity retrieval of trajectories", World Wide Web, vol. 24, pp. 51-83, January 2021.

2. Nikolaos Georgiadis, **Eleftherios Tiakas**, Yannis Manolopoulos, Apostolos N. Papadopoulos. "Skyline-based dissimilarity of images", *Journal of Intelligent Information Systems*, vol. 53, no. 3, pp. 509-545, December 2019.
3. Dimitris Zianis, Gavriil Spyroglou, **Eleftherios Tiakas**, Kalliopi Radoglou. "Bayesian and classical models to predict aboveground tree biomass allometry", *Forest Science Journal*, vol. 62, no. 3, pp. 247-259, June 2016.
4. **Eleftherios Tiakas**, George Valkanas, Apostolos N. Papadopoulos, Yannis Manolopoulos, Dimitrios Gunopoulos. "Processing Top-k Dominating Queries in Metric Spaces", *Transactions on Database Systems (ACM)*, vol. 40, no. 4, pp. 1-38, January 2016.
5. Zaigham Faraz Siddiqui, **Eleftherios Tiakas**, Panagiotis Symeonidis, Myra Spiliopoulou, Yannis Manolopoulos. "Learning Relational User Profiles and Recommending Items as Their Preferences Change", *International Journal on Artificial Intelligence Tools (World Scientific Publishing Company)*, vol. 24, no. 2, 31 pages, April 2015.
6. Nantia Iakovidou, **Eleftherios Tiakas**, Konstantinos Tsihclas, Yannis Manolopoulos. "Going over the three dimensional protein structure similarity problem", *Artificial Intelligence Review (Springer)*, vol. 42, no. 3, pp. 445-459, October 2014.
7. Panagiotis Symeonidis, **Eleftherios Tiakas**. "Transitive node similarity: predicting and recommending links in signed social networks", *World Wide Web Journal (Springer)*, vol. 17, no. 4, pp. 743-776, July 2014.
8. **Eleftherios Tiakas**, Apostolos N. Papadopoulos, Yannis Manolopoulos. "On Estimating the Maximum Domination Value and the Skyline Cardinality of Multi-Dimensional Data Sets", *International Journal of Knowledge-Based Organizations (IGI Global)*, vol. 3, no. 4, pp. 61-83, October 2013.
9. **Eleftherios Tiakas**, Dimitrios Rafailidis, Anastasios Dimou, Petros Daras. "MSIDX: Multi-Sort Indexing for Efficient Content-Based Image Search and Retrieval", *Transactions on Multimedia (IEEE)*, vol. 15, no. 6, pp. 1415-1430, October 2013.
10. Panagiotis Symeonidis, **Eleftherios Tiakas**, Yannis Manolopoulos. "A unified framework for link and rating prediction in multi-modal social networks", *International Journal of Social Network Mining (Inderscience)*, vol. 1, no. 3/4, pp. 225-253, January 2013.
11. **Eleftherios Tiakas**, Apostolos N. Papadopoulos, Yannis Manolopoulos. "Progressive processing of subspace dominating queries", *The VLDB Journal (Springer)*, vol. 20, no. 6, pp. 921-948, December 2011.

12. **Eleftherios Tiakas**, Apostolos N. Papadopoulos, Alexandros Nanopoulos, Yannis Manolopoulos. "Node and edge selectivity estimation for range queries in spatial networks", *Information Systems (Elsevier)*, vol. 34, no. 3, pp. 328-352, May 2009.
13. **Eleftherios Tiakas**, Apostolos N. Papadopoulos, Alexandros Nanopoulos, Yannis Manolopoulos, Dragan Stojanovic, Slobodanka Djordjevic-Kajan. "Searching for similar trajectories in spatial networks", *Journal of System and Software (Elsevier)*, vol. 82, no. 5, pp. 772-788, May 2009.
14. **Eleftherios Tiakas**, Stefanos Ougiaroglou, Petros Nicopolitidis. "Efficient algorithms for constructing broadcast disks programs in asymmetric communication environments", *Telecommunication Systems (Springer)*, vol. 41, no. 3, pp. 185-209, May 2009.

#### **Publications in Books (academic book chapters)**

1. Gavriil Spyroglou, **Eleftherios Tiakas**, Gregor Chatziphilippidis, Vasiliki Kazana. "The design and use of forest decision support systems in Greece", *Computer-based tools for supporting forest management. The experience and the expertise world-wide (Epsilon Open Archive)*, pp. 152-167, 2014.
2. Theodoros Semertzidis, Dimitrios Rafailidis, **Eleftherios Tiakas**, Michael G. Strintzis, Petros Daras. "Multimedia Indexing, Search and Retrieval in Large Databases of Social Networks", *Social Media Retrieval, Computer Communications and Networks series (Springer)*, pp. 43-63, 2012.

#### **Papers in peer-reviewed International Conferences**

1. Theodoros Tzouramanis, **Eleftherios Tiakas**, Apostolos N. Papadopoulos, Yannis Manolopoulos. "The Range Skyline Query", *Proceedings of the 27th International Conference on Information and Knowledge Management (ACM / CIKM)*, pp. 47-56, Torino, Italy, October 2018.
2. Nikolaos Georgiadis, **Eleftherios Tiakas**, Yannis Manolopoulos. "Detecting Intrinsic Dissimilarities in Large Image Databases through Skylines", *Proceedings of the 9th International Conference on Management of Digital EcoSystems (ACM / MEDES)*, pp.194-201, Bangkok, Thailand, November 2017, [Best Paper Award].
3. Alexander Tzanakas, **Eleftherios Tiakas**, Yannis Manolopoulos. "Skyline Algorithms on Streams of Multidimensional Data", *Proceedings of the 20th East-European Conference on Advances in Databases and Information Systems (Springer / ADBIS)*, pp. 63-71, Prague, Czech Republic, August 2016.

4. **Eleftherios Tiakas**, Dimitrios Rafailidis. "Scalable Trajectory Similarity Search Based on Locations in Spatial Networks", Proceedings of the 5th International Conference on Model and Data Engineering (Springer / MEDI), LNCS vol. 9344, pp. 213-224, Rhodes, Greece, September 2015.
5. **Eleftherios Tiakas**, Apostolos N. Papadopoulos, Yannis Manolopoulos. "Skyline Queries: an Introduction (invited)", Proceedings of the 6th International Conference on Information, Intelligence, Systems & Applications (IISA), 6 pages, Corfu, Greece, July 2015.
6. **Eleftherios Tiakas**, Apostolos N. Papadopoulos, Yannis Manolopoulos. "Top-k Dominating Queries: a Survey (invited)", Proceedings of the 17th International Symposium on Programming and Systems (ISPS), 10 pages, Algiers, Algeria, April 2015.
7. Zaigham Faraz Siddiqui, **Eleftherios Tiakas**, Panagiotis Symeonidis, Myra Spiliopoulou, Yannis Manolopoulos. "xStreams: Recommending Items to Users with Time-evolving Preferences", Proceedings of the 4th International Conference on Web Intelligence, Mining and Semantics (ACM / WIMS), Article 22, 12 pages, Thessaloniki, Greece, June 2014.
8. **Eleftherios Tiakas**, George Valkanas, Apostolos N. Papadopoulos, Yannis Manolopoulos, Dimitrios Gunopulos: "Metric-Based Top-k Dominating Queries", Proceedings of the 17th International Conference on Extending Database Technology (Open Proceedings / EDBT), pp. 415-426, Athens, Greece, March 2014, [Best Paper Award].
9. Nantia Iakovidou, **Eleftherios Tiakas**, Konstantinos Tsihclas: "DISCO: A New Algorithm for Detecting 3D Protein Structure Similarity", Proceedings of the Artificial Intelligence Applications and Innovations Workshops (Springer / AIAI), pp. 622-631, Halkidiki, Greece, September 2012.
10. Panagiotis Symeonidis, **Eleftherios Tiakas**, Yannis Manolopoulos. "Product recommendation and rating prediction based on multi-modal social networks", Proceedings of the 5th ACM Conference on Recommender Systems (ACM / RECSYS), pp. 61-68, Chicago, IL, USA, October 2011.
11. Zaigham Faraz Siddiqui, Myra Spiliopoulou, Panagiotis Symeonidis, **Eleftherios Tiakas**. "A Data Generator for Multi-Stream Data", Proceedings of the 2nd International Workshop on Mining Ubiquitous and Social Environments (Springer / MUSE), pp. 63-70, Athens, Greece, September 2011.
12. Panagiotis Symeonidis, **Eleftherios Tiakas**, Yannis Manolopoulos. "Transitive node similarity for link prediction in social networks with positive and negative links", Proceedings of the 4th ACM Conference on Recommender Systems (ACM / RECSYS), pp. 183-190, Barcelona, Spain, September 2010.

13. **Eleftherios Tiakas**, Apostolos N. Papadopoulos, Yannis Manolopoulos. "Estimation of the Maximum Domination Value in Multi-dimensional Data Sets", Proceedings of the 14th East-European Conference on Advances in Databases and Information Systems (Springer / ADBIS), pp. 505-519, Novi Sad, Serbia, September 2010.
14. **Eleftherios Tiakas**, Apostolos N. Papadopoulos, Yannis Manolopoulos. "Graph Node Clustering via Transitive Node Similarity", Proceedings of the 14th Panhellenic Conference on Informatics (IEEE / PCI), pp. 72-77, Tripoli, Greece, September 2010.
15. **Eleftherios Tiakas**, Apostolos N. Papadopoulos, Alexandros Nanopoulos, Yannis Manolopoulos. "Selectivity estimation in spatial networks", Proceedings of the 23rd Annual Symposium on Applied Computing (ACM / SAC), pp. 852-856, Fortaleza, Ceara, Brazil, March 2008.
16. **Eletherios Tiakas**, Stefanos Ougiaroglou, Petros Nicopolitidis. "Efficient broadcast disks program construction in asymmetric communication environments", Proceedings of the 10th International Symposium on Modelling, Analysis and Simulation of Wireless and Mobile Systems (ACM / MSWiM), pp. 279-283, Chania, Crete Island, Greece, October 2007.
17. **Eleftherios Tiakas**, Apostolos N. Papadopoulos, Alexandros Nanopoulos, Yannis Manolopoulos, Dragan Stojanovic, Slobodanka Djordjevic-Kajan. "Trajectory Similarity Search in Spatial Networks", Proceedings of the 10th International Database Engineering & Applications Symposium (IEEE / IDEAS), pp. 185-192, Delhi, India, December 2006.

#### **Books - Monographs**

1. Apostolos N. Papadopoulos, **Eleftherios Tiakas**, Theodoros Tzouramanis, Nikolaos Georgiadis, Yannis Manolopoulos. "Skylines and Other Dominance-Based Queries", Synthesis Lectures on Data Management, Morgan & Claypool Publishers, 158 pages, November 2020.

#### **Technical Reports**

1. Alexander Tzanakas, **Eleftherios Tiakas**, Yannis Manolopoulos. "Revisited skyline query algorithms on streams of multidimensional data", Technical Report, Aristotle University of Thessaloniki, 2016.

### **Member of scientific committee of academic conferences and reviewer**

1. **SAC-2023**: 38th ACM/SIGAPP Symposium On Applied Computing.
2. **CCCI-2023**: 2023 International Conference on Communications, Computing, Cybersecurity and Informatics.
3. **CITS-2023**: 2023 International Conference on Computer, Information and Telecommunication Systems.
4. **ECML-PKDD-2022**: 2022 European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases.
5. **SAC-2022**: 37th ACM/SIGAPP Symposium On Applied Computing.
6. **CCCI-2022**: 2022 International Conference on Communications, Computing, Cybersecurity and Informatics.
7. **CITS-2022**: 2022 International Conference on Computer, Information and Telecommunication Systems.
8. **CCCI-2021**: 2021 International Conference on Communications, Computing, Cybersecurity and Informatics.
9. **CITS-2021**: 2021 International Conference on Computer, Information and Telecommunication Systems.
10. **WIMS-2020**: 10th International Conference on Web Intelligence, Mining and Semantics.
11. **SOFSEM-2020**: 46th International Conference on Current Trends in Theory and Practice of Computer Science.
12. **IDC-2019**: 13th International Symposium on Intelligent Distributed Computing.
13. **IDEAS-2019**: 23rd International Database Engineering & Applications Symposium.
14. **WIMS-2019**: 9th International Conference on Web Intelligence, Mining and Semantics.
15. **WIMS-2018**: 8th International Conference on Web Intelligence, Mining and Semantics.

### **Invitations to lectures / conferences / seminars etc.**

1. **2013**: Lecture with title: "Applications in Spatial Networks", in the postgraduate course: "Spatial Databases and GIS" (Fall Semester), Department of Informatics, AUTH.
2. **1993**: Lecture with title: "The space-filling curve of Lebesgue" and its applications to computers, in the Analysis Seminar in the Department of Mathematics, AUTH.
3. **1992**: Lecture on algorithmic processing of theorems and examples from Mathematical Analysis, and implementation of the studied algorithms in computers, e.g. (a) general solution of the polynomial equation of 3rd degree, (b) solution of differential equations of 2nd degree, etc., Sector of Mathematical Analysis, Department of Mathematics, AUTH.

4. **1991:** Lecture on developing computer graphics applications, which depict and manage several types of mathematical functions (real, parametric, complex, multidimensional, etc.) for educational and research purposes, Sector of Mathematical Analysis, Department of Mathematics, AUTH.

#### **Participation in professional-scientific organizations**

1. **2018:** Member in COST Action IC1406 (cHiPSet) "High-Performance Modeling and Simulation for Big Data Applications.
2. **2009-2013:** Member in EU Cost Action FP0804, Forest Management Decision Support Systems (FORSYS).
3. **2002-2023:** Member of the Hellenic Society for the Protection of Intellectual Property (AEPI – EYED - EDEM).

#### **Research Interests – Work in progress**

*Big Data, Databases, Data Structures, Query Processing Algorithms, Indexing Structures, Spatial and Multidimensional Databases, Spatial Databases, Multimedia Databases, Information Systems, Data Mining, Information Retrieval, Similarity Search, Social Networks, Bioinformatics, Medical research, Algorithm Design and Analysis, Discrete Mathematics, Decision Support Systems, Forest Modelling.*