

Curriculum Vitae

Nikos Pelekis

Associate Professor, University of Piraeus

Last update: 9.9.2024

1. PERSONAL DATA

Contact info:

Department of Statistics and Insurance Science, University of Piraeus, office 601, Gr. Lambraki 126
tel. 210-4142428, fax: 210-4142264, skype: nikos.pelekis
E-mail: npelekis@unipi.gr, nikos.pelekis@gmail.com
URL: <http://www.unipi.gr/faculty/npelekis/>

Place and Date of Birth:

Athens, 24 August 1975

2. EDUCATION

- **(1999-2002)** PhD in Computation, Department of Computation, UMIST. Title of Doctoral dissertation: "STAU: A Spatio-Temporal Extension for the Oracle DBMS" (supervisor: B. Theodoulidis).
- **(1998-1999)** M.Sc. in Information Systems Engineering, Department of Computation, UMIST. Title of MSc thesis: "Fuzzy Miner: A fuzzy system for solving pattern classification problems", **with (unique) Distinction**.
- **(1994-1998)** B.Sc. in Computer Science, Department of Computer Science, University of Crete, Greece. Rank of acceptance: 13/70. Successfully fulfilled the requirements of the B.Sc in seven semesters (duration of studies is eight semesters). Graduated with a grade point average of 8.02 (fourth in my class). Title of Diploma thesis: "Extraction and Visualization of statistical elements from a database".

3. EXPERIENCE

- **2011–to date.** Faculty member (01/2011-), Department of Statistics and Insurance Science, University of Piraeus (field of expertise: Data Mining).
- **2004–10.** Researcher, Information Management Group, Department of Informatics, University of Piraeus - InfoLab (infolab.cs.unipi.gr).

- **2002–2003.** IT Consultant, Ministry of Foreign Affairs. In the last six months of my military service I was chosen by the Greek Ministries of Defence and Foreign Affairs to provide consultancy services on the organization of the IT requirements of the Hellenic Presidency EU 2003.
- **2001–2002.** Researcher. Centre for Research in Information Management (CRIM, <http://www.crim.co.umist.ac.uk>), UMIST.
- **1999–2001.** Software engineer, Neurosoft S.A. (<http://www.neurosoft.gr>).
- **1997–1998.** Under - graduate Research Assistant, Institute of Computer Science, Foundation for Research and Technology (FORTH <http://www.ics.forth.gr>).

4. RESEARCH

Nikos' research interests include all topics of data science. He has been particularly working for more than twenty years in the field of Mobility Data Management and Mining. He is co-founder of the Data Science Lab. at the University of Piraeus; currently, the group consists of 9 faculty members from 4 different departments as well as several senior and junior researchers.

- **Research interests:**
 - **Knowledge Discovery in Data – KDD, Data Mining:** Classification, cluster analysis, pattern representation and management, machine learning.
 - **Database & Data Warehouse Management:** BIG data, query processing and optimization, spatial / spatiotemporal database management.
 - **Geographical / Mobile Information Systems:** Location-based systems and services in mobile environments.
- **Research projects (since 2005):**
 - “GREEN.DAT.AI - Energy-efficient AI-ready Data Spaces”. EU research project funded by Horizon Europe Research and Innovation Programme. [URL <https://greendatai.eu>].
 - “EMERALDS - Extreme-scale Urban Mobility Data Analytics as a Service”. EU research project funded by Horizon Europe Research and Innovation Programme. [URL <https://emeralds-horizon.eu>].
 - “VesselAI - Enabling Maritime Digitalization by Extreme-Scale Analytics, AI and Digital Twins”. EU research project funded by Horizon 2020 / ICT Programme. [URL <https://vessel-ai.eu>].
 - “i4SEA: Big Data in Monitoring and Analyzing Sea Area Traffic: innovative ICT and Analysis Models”. Co-financed by the European Regional Development Fund of the European Union and Greek national funds. [URL <https://i4sea.eu/el>].
 - “MASTER – Multiple Aspects Trajectory Management and Analysis”. EU research project funded by Horizon 2020 / ICT Programme Research Executive Agency (REA), European Commission, Marie Skłodowska-Curie. [URL <http://www.master-project-h2020.eu>].
 - “Track & Know – Big Data for Mobility Tracking Knowledge Extraction in Urban Areas”. EU research project funded by Horizon 2020 / ICT Programme. [URL under construction].

- “DART – Data-driven Aircraft Trajectory Prediction Research”. EU research project funded by Horizon 2020 / SESAR Programme. [URL <http://dart-sesar.eu>].
- “DATACRON – Big Data Analytics for Time Critical Mobility Forecasting”. EU research project funded by Horizon 2020 / ICT Programme. [datacron-project.eu].
- “AMINESS”, GSRT Programme «Συνεργασία 2011», 2013-15, [<http://aminess.eu>].
- “SEEK – Semantic Enrichment of Trajectory Knowledge Discovery”, FP7/ PEOPLE Programme, [www.seek-project.eu].
- “DATASIM – Data Science for Simulating the Era of Electric Vehicles”. FP7/ICT/FET-Open Programme, 2011-14, [www.datasim-fp7.eu].
- “MOVE – Knowledge Discovery from Moving Objects”, ESF/COST Programme, 2009-13. [www.move-cost.info].
- “Mobility, Data Mining, and Privacy (MODAP)”. FP7/ICT/FET-Open Programme, 2009-12, [www.modap.org].
- “Geographic Privacy-aware Knowledge Discovery and Delivery (GeoPKDD)”, [www.geopkdd.eu], FP6/IST/FET-Open Programme, 2005-09.
- “Management of spatiotemporal and semantic data for the documentation of historical information (DIACHORON)”, GSRT Programme «Ανταγωνιστικότητα», 2006-08.
- “Ontology-based construction and management of metadata for the intelligent search in document and imagery collections (MetA-On)”, Information Society Programme, 2006-08.
- “Spatio-temporal Data and Knowledge Management in Expert Virtual Environments” Pythagoras EPEAEK II Programme, 2004-05.

5. PROFESSIONAL ACTIVITIES

- **Invited Lectures in Conferences, MSc/PhD Programs, etc.**

- Teaching lecture series (with Yannis Theodoridis) of 20-40 hours duration with credits (PhD/MSc level course), in the topic of "Mobility Data Management and Exploration": JRC Ispra (Apr. 2013), KAUST (Jun. 2012, Jun. 2011), Ghent Univ. (Feb. 2012), Univ. Trento (Nov. 2011), Aalborg Univ. (Sep. 2011), Univ. Milan (May. 2011). [[>> Teaching >> Tutorials](http://infolab.cs.unipi.gr)]
- Invited lecture «Mobility Data Management and Mining» in summer school on “Mobility, Data Mining, and Privacy”, Rhodes, Aug. 2010.

- **Member of Editorial Boards, Endowments, Steering Committees**

- Invited member in the Editorial Board ECML PKDD (2014-2016), Data Mining and Knowledge Discovery – DMKD
- Member of the Editorial Board, Int. J. of Knowledge-Based Organizations – IJKBO (2011-)

- **Reviewer in Scientific Journals:**

- *Knowledge Discovery and Data Mining*: Knowledge and Information Systems, Int'l J. on Data Warehousing and Mining, ACM Trans. on Knowledge Discovery in Data, Data Mining and Knowledge Discovery, Journal of Intelligent Information Systems, Journal on Data Semantics.
- *Database Management*: IEEE Trans. on Knowledge and Data Engineering, Data and Knowledge Engineering, The VLDB J.
- *Geographical Information Science*: GeoInformatica, Int'l Journal of Geographical Information Science, ACM Transactions on Spatial Algorithms and Systems.
- **Program Committee Services:**
 - European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases – ECML PKDD (2011, 2013, 2016, 2020, 2024).
 - IEEE International Conference on Mobile Data Management (2024).
 - International Symposium on Spatial and Temporal Data (2023).
 - International Workshop on Big Mobility Data Analytics (BMDA), 2023, 2024.
 - 1st International Workshop on Impact of Algorithms and Services on the Urban Ecosystem (MAURO2024)
 - Fifth Annual Conference on AI, Big Data, Social Media, and People on the Move (2023).
 - International Conference on Extending Database Technology (2018, 2019).
 - ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (2018).
 - Int'l ACM Conference on Information and Knowledge Management – CIKM (2009, 2010, 2011).
 - International Workshop on Mobility Analytics for Spatio-temporal and Social Data – MATES, VLDB Workshop (2017, 2018).
 - International Conference on Geographical Information Systems Theory, Applications and Management – GISTAM (2017).
 - International Workshop on Big Geo Data Quality and Privacy – BIGQP2017, EDBT Workshop (2017).
 - International Symposium "From Data to Models and Back" – DataMod (2016, 2019).
 - Event Processing, Forecasting and Decision-Making in the Big Data Era – EPForDM, EDBT Workshop (2015).
 - International Symposium on Modelling and Knowledge Management applications: Systems and Domains – MoKMaSD (2014, 2015).
 - ACM Symposium On Applied Computing, Data Mining track – ACM SAC DM (2011, 2012, 2013).
 - IEEE Int'l Workshop on Semantic Aspects in Data Mining (SADM), (2011).
 - Int'l Workshop on Pattern Representation and Management – PaRMa.
 - 6th Hellenic Data Management Symposium – HDMS'07.

- IADIS European Conference on Data Mining – DM (2008).
 - International Conference on Telecommunications and Multimedia – TEMU (2010, 2012).
 - Panhellenic Conference on Informatics – PCI (2012).
 - 1st Mining Humanistic Data Workshop – MHDW (2012).
 - Special Session on Statistics and Probabilities for Information Systems (SIS), in conjunction with PCI (2013).
- **Conference organizational activities**
 - Member of the organizational committee of the 1st Int’l Summer School on Data Science for Mobility (DSM), Oct. 2022 (with Chiara Renso). [URL <http://master-school.isti.cnr.it>]
 - Member of the organizational committee of the 5th Int’l Workshop on Big Mobility Data Analytics (BMDA), in conjunction with Int’l Conference on Extending Database Technology (EDBT), Edinburg, UK, Mar. 2022 (with Alessandra Raffaeta, Kristian Torp, Mahmoud Sakr).
 - Member of the organizational committee of the 3rd Int’l Workshop on Big Mobility Data Analytics (BMDA), in conjunction with Int’l Conference on Extending Database Technology (EDBT), Copenhagen, Denmark, Mar. 2020 (with Chiara Renso, Yannis Theodoridis, Karine Zeitouni).
 - Member of the organizational committee of the 2nd Int’l Workshop on Big Mobility Data Analytics (BMDA), in conjunction with Int’l Conference on Extending Database Technology (EDBT) Lisbon, Portugal, Mar. 2019 (with Alexander Artikis, Chiara Renso, Themis Palpanas, Yannis Theodoridis, Dimitris Zissis).
 - Member of the organizational committee of the Int’l Workshop on Big Mobility Data Analytics (BMDA), in conjunction with Int’l Conference on Extending Database Technology (EDBT), Vienna, Austria. March 2018 (with Gennady Andrienko, Alexander Artikis, Fosca Giannotti, Akrivi Kioussi, Themis Palpanas, Yannis Theodoridis).
 - Member of the organizational committee of the “Workshop on Moving Objects at Sea: Operational Frameworks and Systems”, Brest, France, 2013.
 - Member of the organizational committee of the “European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML PKDD)”, Athens, 2011 (with Yannis Theodoridis).
 - Stream co-chair “Data Mining and Knowledge Discovery” στο πλαίσιο του Ευρωπαϊκού Συνεδρίου Επιχειρησιακής Έρευνας (EURO), Bonn, Germany, 2009 (with Yannis Theodoridis).
 - **Citations**
 - SCOPUS (scopus.com): 3230 citations resulting in h-index = 28.
 - Google Scholar (scholar.google.gr): 5848 citations (probably, including self-citations) resulting in h-index = 37.

6. PUBLICATIONS

- *MONOGRAPHS*

- [M2] VOUIROS, G.A., ANDRIENKO, G., DOULKERIDIS, C., **PELEKIS, N.**, ARTIKIS, A., JOUSSELME, A.-L., RAY, C., CORDERO, J.M., SCARLATTI, D.: “Big Data Analytics for Time-Critical Mobility Forecasting. From Raw Data to Trajectory-Oriented Mobility Analytics in the Aviation and Maritime Domains”, Springer, 2020. ISBN 978-3-030-45163-9.
- [M1] **N. PELEKIS**, Y. THEODORIDIS: *Mobility Data Management and Exploration*. Springer, New York, 2014. ISBN 978-1-4939-0391-7.

- *ARTICLES IN REFEREED JOURNALS*

- [J30] P. MANDALIS, E. CHONDRODIMA, Y. KONTOULIS, **N. PELEKIS**, Y. THEODORIDIS: “A Transformer-based Method for Vessel Traffic Flow Forecasting”, *GeoInformatica*, 2024. Springer
- [J29] E. CHONDRODIMA, **N. PELEKIS**, A. PIKRAKIS, Y. THEODORIDIS: “An Efficient LSTM Neural Network-based Framework for Vessel Location Forecasting”, *IEEE Transactions on Intelligent Transportation Systems*, 24(5): 4872-4888, 2023. IEEE
- [J28] E. CHONDRODIMA, H. GEORGIU, **N. PELEKIS**, Y. THEODORIDIS: ”Particle Swarm Optimization and RBF Neural Networks for public transport arrival time prediction using GTFS data”, *International Journal of Information Management Data Insights*, 2(2), 2022. Elsevier
- [J27] C. DOULKERIDIS, A. VLACHOU, **N. PELEKIS**, Y. THEODORIDIS: “A Survey on Big Data Processing Frameworks for Mobility Analytics”, *ACM SIGMOD Record*, 50(2): 18–29, 2021. ACM
- [J26] P. TAMPAKIS, C. DOULKERIDIS, **N. PELEKIS**, Y. THEODORIDIS: “Distributed Subtrajectory Join on Massive Datasets”, *ACM Transactions on Spatial Algorithms and Systems*, 6(2): 8:1-8:29, 2020. ACM.
- [J25] H. V GEORGIU, **N. PELEKIS**, S. SIDERIDIS, D. SCARLATTI, Y. THEODORIDIS: “Semantic-aware Aircraft Trajectory Prediction using Flight Plans”, *International Journal of Data Science and Analytics*, 9(2): 215-228, 2020. Springer
- [J24] GEORGIOS M. SANTIPANTAKIS, APOSTOLOS GLENIS, KOSTAS PATROUMPAS, AKRIVI VLACHOU, CHRISTOS DOULKERIDIS, GEORGE A. VOUIROS, **N. PELEKIS**, Y. THEODORIDIS: “SPARTAN: Semantic Integration of Big Spatio-temporal Data from Streaming and Archival Sources”, *Future Generation Computer Systems*, Volume 1. 10, September 2020, Pages 540-555. Elsevier
- [J23] S. MANSALIS, E. NTOUTSI, **N. PELEKIS**, Y. THEODORIDIS: “An Evaluation of Data Stream Clustering Algorithms”, *Statistical Analysis and Data Mining*, 11(4), 167-187, 2018. Wiley
- [J22] A. S. FURTADO, L. O. C. ALVARES, **N. PELEKIS**, Y. THEODORIDIS, V. BOGORNY: “Unveiling Movement Uncertainty for Robust Trajectory Similarity Analysis”, *International Journal of Geographical Information Science*, 32(1), 2018.
- [J21] **N. PELEKIS**, P. TAMPAKIS, M. VODAS, C. DOULKERIDIS, Y. THEODORIDIS: “On Temporal-Constrained Sub-Trajectory Cluster Analysis”, *Data Mining and Knowledge Discovery Journal*. 2017. 31(5), 1294-1330, 2017.
- [J20] S. SIDERIDIS, **N. PELEKIS**, Y. THEODORIDIS: “On Querying and Mining Semantic-aware Mobility Timelines”, *International Journal of Data Science and Analytics*, 2(1), 29-44, 2016.

- [J19] K. PATROUMPAS, E. ALEVIZOS, A. ARTIKIS, M. VODAS, **N. PELEKIS**, Y. THEODORIDIS: “Online Event Recognition from Moving Vessel Trajectories”, *GeoInformatica*, 21(2), 389-427, 2016.
- [J18] **N. PELEKIS**, S. SIDERIDIS, P. TAMPAKIS, Y. THEODORIDIS: “Simulating our LifeSteps by Example”, *ACM Transactions on Spatial Algorithms and Systems*, Vol. 2, Issue 3, October 2016. ACM.
- [J17] R. FILETO, C. MAY, C. RENSO, **N. PELEKIS**, D. KLEIN, Y. THEODORIDIS: “The Baquara² Knowledge-based Framework for Semantic Enrichment and Analysis of Movement Data”, *Data & Knowledge Engineering*, 98:104-122, 2015. Elsevier.
- [J16] A. KONSTANTINIDIS, G. CHATZIMILIOUDIS, D. ZEINALIPOUR-YAZTI, P. MPEIS, **N. PELEKIS**, Y. THEODORIDIS: “Privacy-Preserving Indoor Localization on Smartphones”, *IEEE Transactions on Knowledge and Data Engineering*, 27(11): 3042-3055, November 2015. IEEE CS Press.
- [J15] **N. PELEKIS**, E. FRENTZOS, N. GIATRAKOS, Y. THEODORIDIS: “HERMES: A Trajectory DB Engine for Mobility-Centric Applications”, *Int’l Journal of Knowledge-based Organizations (IJKBO)*, 5(2), 19-41, 2015. IGI Global.
- [J14] C. PARENT, S. SPACCAPIETRA, C. RENSO, G. ANDRIENKO, N. ANDRIENKO, V. BOGORNY, M. L. DAMIANI, A. GKOUALALAS-DIVANIS, J. MACEDO, **N. PELEKIS**, Y. THEODORIDIS, Z. YAN: “Semantic Trajectories Modeling and Analysis”, *ACM Computing Surveys*, 45(4), December 2013. ACM Press.
- [J13] **N. PELEKIS**, Y. THEODORIDIS, D. JANSSENS: “On the management and analysis of our LifeSteps”, *SIGKDD Explorations*, 15(1):23-32, June 2013. ACM.
- [J12] G. KELLARIS, **N. PELEKIS**, Y. THEODORIDIS: “Map-Matched Trajectory Compression”, *Journal of Systems and Software*, 86(6):1566-1579, June 2013. Elsevier.
- [J11] **N. PELEKIS**, E. FRENTZOS, N. GIATRAKOS, Y. THEODORIDIS: “On the Support of Mobility in ORDBMS”, *Int’l Journal of Knowledge-based Organizations (IJKBO)*, 4(1), 2014. IGI Global.
- [J10] C. PANAGIOTAKIS, **N. PELEKIS**, I. KOPANAKIS, E. RAMASSO, Y. THEODORIDIS: “Segmentation and Sampling of Moving Object Trajectories based on Representativeness”, *IEEE Transactions on Knowledge and Data Engineering*, 24(7):1328-1343, July 2012. IEEE CS Press.
- [J09] **N. PELEKIS**, G. ANDRIENKO, N. ANDRIENKO, I. KOPANAKIS, G. MARKETOS, Y. THEODORIDIS: “Visually Exploring Movement Data via Similarity-based Analysis”, *Journal of Intelligent Information Systems (JIIS)*, 38(2), 2012. Springer.
- [J08] **N. PELEKIS**, I. KOPANAKIS, E.E. KOTSIFAKOS, E. FRENTZOS, Y. THEODORIDIS: “Clustering Uncertain Trajectories”, *Knowledge and Information Systems (KAIS)*, 28(1):117-147, 2011. Springer.
- [J07] RAFFAETÀ, L. LEONARDI, G. MARKETOS, G. ANDRIENKO, N. ANDRIENKO, E. FRENTZOS, N. GIATRAKOS, S. ORLANDO, **N. PELEKIS**, A. RONCATO, C. SILVESTRI: “Visual Mobility Analysis using T-Warehouse”. *International Journal of Data Warehousing & Mining*, 7(1), 2011.
- [J06] H. KARANIKAS, G. KOUNDOURAKIS, I. KOPANAKIS, T. MAVROUDAKIS, **N. PELEKIS**: “Discovering market trends in the biotechnology industry”, *Int. J. Business Intelligence and Data Mining (IJBIDM)*, Vol. 6, No. 2, 2011.
- [J05] D.K. IAKOVIDIS, **N. PELEKIS**, E.E. KOTSIFAKOS, I. KOPANAKIS, H. KARANIKAS, Y. THEODORIDIS: “A Pattern Similarity Scheme for Medical Image Retrieval”, *IEEE Transactions on Information Technology in Biomedicine*, 13(4):442-450, July 2009. IEEE CS Press.

- [J04] **N. PELEKIS**, D. K. IAKOVIDIS, E. KOTSIFAKOS AND I. KOPANAKIS: “Fuzzy Clustering of Intuitionistic Fuzzy Data”. *International Journal of Business Intelligence and Data Mining*, 3(1), 45-65, 2008.
- [J03] E. FRENTZOS, K. GRATSIAS, **N. PELEKIS**, Y. THEODORIDIS: “Algorithms for Nearest Neighbor Search on Moving Object Trajectories”, *GeoInformatica*, 11(2):159-193, June 2007. Springer.
- [J02] **N. PELEKIS**, B. THEODOULIDIS, I. KOPANAKIS, Y. THEODORIDIS, “Fuzzy Miner: Extracting Fuzzy Rules from Numerical Patterns”, *Int’l Journal of Data Warehousing and Mining*, 1(1):57-81, January-March 2005. Idea Group.
 - Also appears in J. Wang (ed.) *Data Warehousing and Mining: Concepts, Methodologies, Tools, and Applications*, Information Science Reference, 2008.
- [J01] **N. PELEKIS**, B. THEODOULIDIS, I. KOPANAKIS, Y. THEODORIDIS, “Literature Review of Spatio-Temporal Database Models”, *Knowledge Engineering Review*, 19(3):235-274, September 2004. Cambridge University Press.

- **BOOK CHAPTERS**

- [B13] G. ANDRIENKO, N. ANDRIENKO, F. PATTERSON, S. CHEN, R. WEIBEL, H. HUANG, C. DOULKERIDIS, H. GEORGIU, N. PELEKIS, Y. THEODORIDIS, M. NANNI, L. LONGHI, A. KOUMPAROS, A. YASAR, I. KURESHI: “Visual Analytics for Characterizing Mobility Aspects of Urban Context”, Shi, W. et al. (eds.) *Urban Informatics*, Chapter 40, 2021. Springer
- [B12] P. TAMPAKIS, S. SIDERIDIS, P. NIKITOPOULOS, N. PELEKIS, Y. THEODORIDIS: “Maritime Data Analytics”, In A. Artikis and D. Zissis (ed.) *Guide to Maritime Informatics*, p. 119-147, 2021.
- [B11] K. PATROUMPAS, E. CHONDRODIMA, N. PELEKIS, Y. THEODORIDIS: “Trajectory Detection and Summarization over Surveillance Data Streams”, *Big Data Analytics for Time-Critical Mobility Forecasting*, p. 85-120, Springer, 2020.
- [B10] H. V. GEORGIU, P. PETROU, P. TAMPAKIS, S. SIDERIDIS, E. CHONDRODIMA, N. PELEKIS, Y. THEODORIDIS: “Future Location and Trajectory Prediction”, *Big Data Analytics for Time-Critical Mobility Forecasting*, p. 215-254, Springer, 2020.
- [B09] P. TAMPAKIS, S. SIDERIDIS, P. NIKITOPOULOS, N. PELEKIS, C. DOULKERIDIS, Y. THEODORIDIS: “Offline Trajectory Analytics”, *Big Data Analytics for Time-Critical Mobility Forecasting*, p. 275-312, Springer, 2020.
- [B08] D. KOPANAKI, **N. PELEKIS**, Y. THEODORIDIS: “Systems for privacy-preserving mobility data management”, In A. Gkoulalas-Divanis and C. Bettini (ed.) *Handbook on Mobile Data Privacy*, Springer-Verlag. to appear.
- [B07] G. MARKETOS, M. L. DAMIANI, **N. PELEKIS**, Y. THEODORIDIS, Z. YAN. “Trajectory Collection and Reconstruction”, In C. Renso, S. Spaccapietra, and E. Zimányi (ed.), *Mobility Data: Modeling, Management, and Understanding*. Cambridge University Press, 2013.
- [B06] N. ANDRIENKO, G. ANDRIENKO, **N. PELEKIS**, AND S. SPACCAPIETRA. “Basic concepts of movement data”. In F. Giannotti and D. Pedreschi (ed.) *Mobility, Data Mining and Privacy, Geographic Knowledge Discovery*, Springer-Verlag. 2008.
- [B05] C. RENSO, S. PUNTONI, E. FRENTZOS, A. MAZZONI, B. MOELANS, **N. PELEKIS** AND F. PINI. “Wireless Network Data Sources: Tracking and Synthesizing Trajectories”. In F. Giannotti and D. Pedreschi (ed.) *Mobility, Data Mining and Privacy, Geographic Knowledge Discovery*, Springer-Verlag. 2008.
- [B04] J. MACEDO, C. VANGENOT, W. OTHMAN, **N. PELEKIS**, E. FRENTZOS, B. KUIJPERS, I. NTOUTSI, S. SPACCAPIETRA, AND Y. THEODORIDIS. “Trajectory data models”. In F. Giannotti and D. Pedreschi (ed.) *Mobility, Data Mining and Privacy, Geographic Knowledge Discovery*, Springer-Verlag. 2008.

- [B03] E. FRENTZOS, **N. PELEKIS**, I. NTOUTSI, AND Y. THEODORIDIS. “Trajectory Database Systems”. In F. Giannoti and D. Pedreschi (ed.) *Mobility, Data Mining and Privacy, Geographic Knowledge Discovery*, Springer-Verlag, 2008.
- [B02] **N. PELEKIS**, A. RAFFAETA, M.-L. DAMIANI, C. VANGENOT, G. MARKETOS, E. FRENTZOS, I. NTOUTSI AND Y. THEODORIDIS. “Towards Trajectory Data Warehouses”. In F. Giannoti and D. Pedreschi (ed.) *Mobility, Data Mining and Privacy, Geographic Knowledge Discovery*, Springer-Verlag, 2008.
- [B01] I. NTOUTSI, **N. PELEKIS**, Y. THEODORIDIS, “Pattern Comparison in Data Mining: A Survey”. In D. Taniar (ed.) *Research and Trends in Data Mining Technologies and Applications*, IDEA Group Publishing, 2007.
- Also appears in J. Wang (ed.) *Data Warehousing and Mining: Concepts, Methodologies, Tools, and Applications*, Information Science Reference, 2008.
- *PAPERS IN FULLY REFEREED INT’L CONFERENCES, SYMPOSIA AND WORKSHOPS*
- [C74] P. T. MICHALSKI, N. PREUB, M. RENZ, A. TRITSAROLIS, Y. THEODORIDIS, **N. PELEKIS**: “Collision-Risk-Aware Ship Routing”, *Proceedings of the 32nd ACM Int. Conf. on Advances in Geographic Information Systems (ACM SIGSPATIAL 2024)*, Atlanta, GA, USA October, 2024. ACM Press
- [C73] A. TRITSAROLIS, **N. PELEKIS**, K. BERETA, D. ZISSIS, Y. THEODORIDIS: “On Vessel Location Forecasting and the Effect of Federated Learning”, *Proceedings of the 25th IEEE Int. Conf. on Mobile Data Management (MDM)*, Brussels, Belgium, June 2024. IEEE CPS
- [C72] G. GRIGOROPOULOS, I. SPILIOPOULOS, I. CHAMATIDIS, M. KALIORAKIS, A. TROUPIOTIS – KAPELIARIS, M. VODAS, E. FILIPPOU, E. CHONDRODIMA, **N. PELEKIS**, Y. THEODORIDIS, D. ZISSIS, K. BERETA: “A Scalable System for Maritime Route and Event Forecasting”, *i&a track, Proceedings of the 27th International Conference on Extending Database Technology*, (EDBT2024), Paestum, Italy, March 2024. OpenProceedings
- [C71] G. GRIGOROPOULOS, I. SPILIOPOULOS, I. CHAMATIDIS, M. KALIORAKIS, A. TROUPIOTIS – KAPELIARIS, M. VODAS, E. FILIPPOU, E. CHONDRODIMA, **N. PELEKIS**, Y. THEODORIDIS, D. ZISSIS, K. BERETA: “GMSA: A Digital Twin Application for Maritime Route and Event Forecasting EDBT” demo track, *Proceedings of the 27th International Conference on Extending Database Technology*, (EDBT2024), Paestum, Italy, March 2024. OpenProceedings
- [C70] E. KARKANIS, **N. PELEKIS**, E. CHONDRODIMA, Y. THEODORIDIS: “Path-based Traffic Flow Prediction”. *Proceedings of the Big Mobility Data Analytics (BMDA) in conjunction with EDBT/ICDT*, Paestum, Italy, March 2024. OpenProceedings
- [C69] P. TAMPAKIS, **N. PELEKIS**: “Pythia: Distributed Pattern-based Future Location Prediction of Moving Objects”. *Proceedings of the Big Mobility Data Analytics (BMDA) in conjunction with EDBT/ICDT*, Paestum, Italy, March 2024. OpenProceedings
- [C68] A. TRITSAROLIS, **N. PELEKIS**, Y. THEODORIDIS: “VesselVision: Fleet Safety Awareness over Streaming Vessel Trajectories”. *Proceedings of the 31st ACM International Conference on Advances in Geographic Information Systems (SIGSPATIAL 2023)*, demo paper, Hamburg, Germany, November 2023: 20:1-20:4. ACM Press
- [C67] A. TRITSAROLIS, B. MURRAY, **N. PELEKIS**, Y. THEODORIDIS: “Collision Risk Assessment and Forecasting on Maritime Data”. *Proceedings of the 31st ACM International Conference on Advances in Geographic Information Systems (SIGSPATIAL 2023)*, Hamburg, Germany, November 2023: 28:1-28:10. ACM Press

- [C66] S. STEFANOPOULOS, C. AKASIADIS, **N. PELEKIS**, D. ZISSIS: “Scalable Distributed Trajectory Clustering Using Apache Spark”, *Proceedings of the Big Mobility Data Analytics (BMDA) in conjunction with EDBT/ICDT*, Ioannina, Greece, March 2023.
- [C65] P. MANDALIS, E. CHONDRODIMA, Y. KONTOULIS, **N. PELEKIS**, Y. THEODORIDIS: “Towards a unified vessel traffic flow forecasting framework”, *Proceedings of the Big Mobility Data Analytics (BMDA) in conjunction with EDBT/ICDT*, Ioannina, Greece, March 2023.
- [C64] GRYLLAKIS F., **PELEKIS N.**, DOULKERIDIS C., VARLAMIS I, THEODORIDIS Y.: “Social Spatio-temporal Keyword Pattern (S²KP) Queries in Multiple Aspect Trajectories Databases”, *Proceedings of the 34th International Conference on Scientific and Statistical Database Management (SSDBM 2022)*, Copenhagen, Denmark, 2022. ACM
- [C63] E. CHONDRODIMA , P. MANDALIS, N. PELEKIS, Y. THEODORIDIS: “Machine Learning Models for Vessel Route Forecasting: An Experimental Comparison”, *Proceedings of the IEEE Int. Conf. Mobile Data Management (MDM)*, June 2022. Industry, System, and Apps track. IEEE CPS
- [C62] P. MANDALIS, E. CHONDRODIMA, I. KONTOULIS, N. PELEKIS, Y. THEODORIDIS: “Machine Learning Models for Vessel Traffic Flow Forecasting: An Experimental Comparison”, *Proceedings of the 3rd IEEE Int. Maritime Big Data Workshop workshop (MBDW) in conjunction with MDM’22*, Paphos, Cyprus, June 2022. IEEE CPS
- [C61] A. TRITSAROLIS, E. CHONDRODIMA, N. PELEKIS, Y. THEODORIDIS: “Vessel Collision Risk Assessment using AIS Data: A Machine Learning Approach”, *Proceedings of the 3rd IEEE Int. Maritime Big Data Workshop workshop (MBDW) in conjunction with MDM’22*, Paphos, Cyprus, June 2022. IEEE CPS
- [C60] P. TAMPAKIS, D. SPYRELLIS, C. DOULKERIDIS, N. PELEKIS, C. KALYVAS AND A. VLACHOU: "A Novel Indexing Method for Spatial-Keyword Range Queries", *Proceedings of the 17th International Symposium on Spatial and Temporal Databases*, August 2021, pages 54–63. **Ralf H. Güting best research paper award.**
- [C59] A. TRITSAROLIS, Y. KONTOULIS, N. PELEKIS, Y. THEODORIDIS: “MaSEC: Discovering Anchorages and Co-movement Patterns on Streaming Vessel Trajectories”, *Proceedings of the 17th International Symposium on Spatial and Temporal Databases*, August 2021, pages 170–173. ACM **Best Demo Paper**
- [C58] E. CHONDRODIMA , H. GEORGIU, **N. PELEKIS**, Y. THEODORIDIS: “Public Transport Arrival Time Prediction Based on GTFS Data”, *Proceedings of the 7th Int’l Conference on Machine Learning and Data Science” LOD 2021*, LNCS 13164, Grasmere, UK. October 2021. Springer
- [C57] P. TAMPAKIS, C. DOULKERIDIS, **N. PELEKIS**, Y. THEODORIDIS: “Scalable Distributed Subtrajectory Clustering”, *Proceedings of the IEEE Int’l Conference on BIG DATA (BigData2019)*, Los Angeles, CA, USA, December, 2019. IEEE CPS.
- [C56] P. PETROU, P. TAMPAKIS, H. GEORGIU, **N. PELEKIS**, Y. THEODORIDIS: “Online long-term trajectory prediction based on mined route patterns”, *Proceedings of the Multiple-Aspect Analysis of Semantic Trajectories Workshop (MASTER 2019) in conjunction with ECML/PKDD’19*, Würzburg, September 16, 2019.
- [C55] P. PETROU, P. NIKITPOULOS, P. TAMPAKIS, A. GLENIS, N. KOUTROUMANIS, G. M. SANTIPANTAKIS, K. PATROUMPAS, A. VLACHOU, H. GEORGIU, E. CHONDRODIMA, C. DOULKERIDIS, **N. PELEKIS**, G. L. ANDRIENKO, F. PATTERSON, G. FUCHS, Y. THEODORIDIS, G. A. VOUIROS: “ARGO: A Big Data Framework for Online Trajectory Prediction”, demo paper, *Proceedings of the 16th Int’l Symposium on Spatial and Temporal Databases, SSTD’19*, Vienna, Austria, August 2019. ACM.

- [C54] S. GIOTAKIS, N. PELEKIS: “On Preserving Sensitive Information of Multiple Aspect Trajectories In-House”, *WWW (Companion Volume) 2019*: 515-522.
- [C53] P. NIKITOPOULOS, A.-I. PARASKEVOPOULOS, C. DOULKERIDIS, N. PELEKIS, Y. THEODORIDIS, “Hot Spot Analysis for Big Trajectory Data”. *Proceedings of the 2018 IEEE Int’l Conference on BIG DATA (BigData2018)*, Seattle, WA, USA, 2018. IEEE CPS.
- [C52] K. PATROUMPAS, N. PELEKIS, Y. THEODORIDIS, “On-the-fly Mobility Event Detection over Aircraft Trajectories”. *Proceedings of the 26th Int’l Conference on Advances in Geographic Information Systems*, ACM SIGSPATIAL’18, WA, USA, 2018. ACM Press.
- [C51] G. A. VOUIROS, C. DOULKERIDIS, G. SANTIPANTAKIS, A. VLACHOU, N. PELEKIS, H. GEORGIU, Y. THEODORIDIS, K. PATROUMPAS, E. ALEVIZOS, A. ARTIKIS, G. FUCHS, M. MOCK, G. ANDRIENKO, N. ANDRIENKO, C. RAY, C. CLARAMUNT, E. CAMOSSO, A.-L. JOUSSELME, D. SCARLATTI, J. MANUEL: “Big Data Analytics for Time Critical Mobility Forecasting: Recent Progress and Research Challenges”, *Proceedings of the 21st International Conference on Extending Database Technology (EDBT2018)*, Vienna, Austria, March 2018. OpenProceedings.
- [C50] G. A. VOUIROS, A. VLACHOU, G. SANTIPANTAKIS, C. DOULKERIDIS, N. PELEKIS, H. GEORGIU, Y. THEODORIDIS, K. PATROUMPAS, E. ALEVIZOS, A. ARTIKIS, G. FUCHS, M. MOCK, G. ANDRIENKO, N. ANDRIENKO, C. CLARAMUNT, C. RAY, E. CAMOSSO, A.-L. JOUSSELME: “Increasing Maritime Situation Awareness via Trajectory Detection, Enrichment and Recognition of Events”, *Proceedings of the 16th International Symposium on Web & Wireless Geographical Information Systems (W2GIS)*, A Coruña, Spain, May 2018, Springer.
- [C49] P. TAMPAKIS, N. PELEKIS, N. ANDRIENKO, G. ANDRIENKO, G. FUCHS, Y. THEODORIDIS: “Time-aware Sub-Trajectory Clustering in Hermes@PostgreSQL”, demo paper, *Proceedings of the IEEE 34th International Conference on Data Engineering (ICDE)*, Paris, France, April 2018. IEEE CPS.
- [C48] F. GRYLLAKIS, N. PELEKIS, C. DOULKERIDIS, S. SIDERIDIS Y. THEODORIDIS: “Spatio-Temporal-Keyword Pattern Queries over Semantic Trajectories with Hermes@Neo4j”, demo paper, *Proceedings of the 21st International Conference on Extending Database Technology (EDBT2018)*, Vienne, Austria, March 2018. OpenProceedings.
- [C47] E. CALVO, J. M. CORDERO, G. VOUIROS, N. PELEKIS, T. KRAVARIS, H. GEORGIU, G. FUCHS, N. ANDRIENKO, G. ANDRIENKO, E. CASADO, D. SCARLATTI, P. COSTAS AND S. AYHAN: “DART: A Machine-Learning Approach to Trajectory Prediction and Demand-Capacity Balancing”, 7th SESAR Innovation Days, 2017. Belgrade, Serbia, 28 – 30, November 2017.
- [C46] F. GRYLLAKIS, N. PELEKIS, C. DOULKERIDIS, S. SIDERIDIS Y. THEODORIDIS: “Searching for Spatio-Temporal-Keyword Patterns in Semantic Trajectories”, *Proceedings of the 16th International Symposium on Intelligent Data Analysis, IDA’17*, London, U.K., 2017. Springer.
- [C45] C. MPAZIOTIS, N. PELEKIS, C. DOULKERIDIS: “DataStories at SemEval-2017 Task 4: Deep LSTM with Attention for Message-level and Topic-based Sentiment Analysis”, *Proceedings of the International Workshop on Semantic Evaluation (SemEval)*, 2017, Vancouver, Canada. **Ranked 1st in Task 4 “Sentiment Analysis in Twitter” of SemEval-2017 competition.**
- [C44] C. MPAZIOTIS, N. PELEKIS, C. DOULKERIDIS: “DataStories at SemEval-2017 Task 6: Siamese LSTM with Attention for Humorous Text Comparison”, *Proceedings of the International Workshop on Semantic Evaluation (SemEval)*, 2017, Vancouver, Canada. **Ranked 2nd in Task 6 “#HashtagWars: Learning a Sense of Humor” of SemEval-2017 competition.**
- [C43] N. PELEKIS, P. TAMPAKIS, M. VODAS, C. PANAGIOTAKIS, Y. THEODORIDIS, “In-DBMS Sampling-based Sub-trajectory Clustering”, *Proceedings of the 20th International Conference*

- on *Extending Database Technology* (EDBT2017), Venice, Italy, March 2017. OpenProceedings.
- [C42] D. KOPANAKI, N. PELEKIS: “Privacy Preservation of Semantic Trajectory Databases using Query Auditing Techniques”, *Proceedings of the 1st International Workshop on Big Geo Data Quality and Privacy (BIGQP @ EDBT/ICDT 2017)*, Venice, Italy, March 2017. OpenProceedings.
- [C41] P. NIKITOPOULOS, A.-I. PARASKEVOPOULOS, C. DOULKERIDIS, N. PELEKIS, Y. THEODORIDIS: “BigCAB: Distributed Hot Spot Analysis over Big Spatio-temporal Data using Apache Spark (GIS Cup)”, *Proceedings of the 24th Int’l Conference on Advances in Geographic Information Systems*, ACM SIGSPATIAL’16, Burlingame, CA, USA, 2016. ACM Press. **Third runner-up award.**
- [C40] D. KOPANAKI, V. THEODOSSOPOULOS, N. PELEKIS, I. KOPANAKIS, Y. THEODORIDIS: “Who Cares about Others’ Privacy: Personalized Anonymization of Moving Object Trajectories”, *Proceedings of the 19th International Conference on Extending Database Technology* (EDBT2016), Bordeaux, France, March 2016. OpenProceedings.
- [C39] A. KONSTANTINIDIS, G. CHATZIMILIOUDIS, D. ZEINALIPOUR-YAZTI, P. MPEIS, N. PELEKIS, Y. THEODORIDIS: “Privacy-Preserving Indoor Localization on Smartphones”, ICDE/TKDE Poster, *Proceedings of the IEEE 32nd International Conference on Data Engineering* (ICDE), Helsinki, Finland, May 2016. IEEE CPS.
- [C38] N. PELEKIS, S. SIDERIDIS, Y. THEODORIDIS: “Hermes^{sem}: a Semantic-aware Framework for the Management and Analysis of our LifeSteps”, *Proceedings of the IEEE International Conference on Data Science and Advanced Analytics*, IEEE DSAA’2015, Paris, France, October 2015. IEEE CPS.
- [C37] A. A. SANTOS, A. S. FURTADO, L. O. ALVARES, N. PELEKIS, V. BOGORNY. “Inferring Relationships from Trajectory Data”, *Proceedings of the XVI Brazilian Symposium on Geoinformatics*, GEOINFO’2015, Campos do Jordao, SP, Brazil, 2015.
- [C36] C. F. COSTA, M. NASCIMENTO, J. MACEDO, Y. THEODORIDIS, N. PELEKIS AND J. MACHADO. “Optimal Time-dependent Sequenced Route Queries in Road Networks”, *Proceedings of the 23rd Int’l Conference on Advances in Geographic Information Systems*, ACM SIGSPATIAL’15, Seattle, Washington, USA, November 2015. ACM Press. **Best Fast Forward Presentation Runner-Up Award.**
- [C35] ALEVIZOS E., ARTIKIS A., PATROUMPAS K., VODAS M., THEODORIDIS Y. PELEKIS N. “How Not To Drown in a Sea of Information: An Event Recognition Approach”, *Proceedings of the IEEE International Conference on Big Data*, Santa Clara, CA, USA, 2015.
- [C34] K. PATROUMPAS, A. ARTIKIS, N. KATZOURIS, M. VODAS, Y. THEODORIDIS, N. PELEKIS, “Event Recognition for Maritime Surveillance”, *Proceedings of the 18th Int’l Conference on Extending Database Technology*, EDBT’15, Brussels, Belgium, March 2015. Springer.
- [C33] B. KROGH, N. PELEKIS, Y. THEODORIDIS, K. TORP: “Path-based Queries on Trajectory Data”, *Proceedings of the 22nd Int’l Conference on Advances in Geographic Information Systems*, ACM SIGSPATIAL’14, Dallas/Fort Worth, TX, USA, November 2014. ACM Press. **Best paper award.**
- [C32] R. FILETO, M. KRÜGER, N. PELEKIS, Y. THEODORIDIS, C. RENSO: “Baquara: A Holistic Ontological Framework for Movement Analysis with Linked Data”, *Proceedings of the 32nd International Conference on Conceptual Modeling*, ER’13, Hong Kong, November 2013. Springer. **Best paper award.**

- [C31] B. KROGH, O. ANDERSEN, E. LEWIS-KELHAM, **N. PELEKIS**, Y. THEODORIDIS, K. TORP: “Trajectory Based Traffic Analysis”, demo paper, *Proceedings of the 21st Int’l Conference on Advances in Geographic Information Systems*, ACM SIGSPATIAL GIS’13, Orlando, Florida, USA, November 2013. ACM Press.
- [C30] **N. PELEKIS**, C. NTRIGKOGIAS, P. TAMPAKIS, S. SIDERIDIS, Y. THEODORIDIS: “Hermoupolis: A Trajectory Generator for Simulating Generalized Mobility Patterns”, demo paper, *Proceedings of the European Conference on Machine Learning / Principles and Practice of Knowledge Discovery in Databases*, ECML/PKDD’13, Prague, Czech Republic, September 2013. Springer.
- [C29] E. FRENTZOS, **N. PELEKIS**, N. GIATRAKOS, Y. THEODORIDIS: “Cost Models for Nearest Neighbor Query Processing over Existentially Uncertain Spatial Data”, *Proceedings of the 13th Int’l Symposium on Spatial and Temporal Databases*, SSTD’13, Munich, Germany, August 2013. Springer.
- [C28] A. DOULAMIS, **N. PELEKIS**, Y. THEODORIDIS: “EasyTracker: An Android Application for Capturing Mobility Behavior”, *Proceedings of the 16th Panhellenic Conference on Informatics*, special session on “2nd Mobile Device Software Development and Web Development”, MDS@PCI’12, Piraeus, Greece, October 2012. IEEE CPS.
- [C27] **N. PELEKIS**, A. GKOUALALAS-DIVANIS, M. VODAS, A. PLEMENOS, D. KOPANAKI, Y. THEODORIDIS: “Private-HERMES: A Benchmark Framework for Privacy-Preserving Mobility Data Querying and Mining Methods”, demo paper, *Proceedings of the 15th Int’l Conference on Extending Database Technology*, EDBT’12, Berlin, Germany, March 2012. OpenProceedings.
- [C26] **N. PELEKIS**, A. GKOUALALAS-DIVANIS, M. VODAS, D. KOPANAKI, Y. THEODORIDIS: “Privacy-aware Querying over Sensitive Trajectory Data”, *Proceedings of the 20th ACM Conference on Information and Knowledge Management*, CIKM’11, Glasgow, Scotland - UK, October 2011. ACM Press.
- [C25] **N. PELEKIS**, E. STEFANAKIS, I. KOPANAKIS, C. ZOTALI, M. VODAS, Y. THEODORIDIS: “ChoroChronos.org: A GeoPortal for Movement Data and Processes”, poster paper, *Proceedings of the 10th Int’l Conference on Spatial Information Theory*, COSIT’11, Maine, USA, September 2011.
- [C24] Z. YAN, N. GIATRAKOS, V. KATSIKAROS, **N. PELEKIS**, Y. THEODORIDIS: “SeTraStream: Semantic-aware Trajectory Construction over Streaming Movement Data”, *Proceedings of the 12th Int’l Symposium on Spatial and Temporal Databases*, SSTD’11, Minneapolis, MN, USA, August 2011. Springer.
- [C23] **N. PELEKIS**, I. KOPANAKIS, C. PANAGIOTAKIS, Y. THEODORIDIS: “Unsupervised Trajectory Sampling”, *Proceedings of the European Conference on Machine Learning / Principles and Practice of Knowledge Discovery in Databases*, ECML/PKDD’10, Barcelona, Spain, September 2010. Springer.
- [C22] L. LEONARDI, G. MARKETOS, E. FRENTZOS, N. GIATRAKOS, S. ORLANDO, **N. PELEKIS**, A. RAFFAETÀ, A. RONCATO, C. SILVESTRI, Y. THEODORIDIS: “T-Warehouse: Visual OLAP Analysis on Trajectory Data”, demo paper, *Proceedings of the 26th IEEE Int’l Conference on Data Engineering*, ICDE’10, Long Beach – CA, USA, March 2010. IEEE CS Press.
- [C21] **N. PELEKIS**, I. KOPANAKIS, E. KOTSIFAKOS, E. FRENTZOS, Y. THEODORIDIS: “Clustering Trajectories of Moving Objects in an Uncertain World”, *Proceedings of the 9th IEEE Int’l Conference on Data Mining*, ICDM’09, Miami – FL, USA, December 2009. IEEE CS Press.
Best application paper award.

- [C20] G. KELLARIS, **N. PELEKIS**, Y. THEODORIDIS: “Trajectory Compression under Network Constraints”, *Proceedings of the 11th International Symposium on Spatial and Temporal Databases*, SSTD’09, Aalborg, Denmark, July 2009. Springer.
- [C19] C. PANAGIOTAKIS, **N. PELEKIS**, AND I. KOPANAKIS: “Trajectory Voting and Classification based on Spatiotemporal Similarity in Moving Object Databases”, *Proceedings of the 8th International Symposium on Intelligent Data Analysis*, IDA’09, Lyon, France, 2009. Springer.
- [C18] V. TSIKOLIDAKI, **N. PELEKIS**, Y. THEODORIDIS: “GF-Miner: A Genetic Fuzzy Classifier for Numerical Data”, *Proceedings of the 5th IFIP Conference on Artificial Intelligence Applications & Innovations*, AIAI’09, Thessaloniki, Greece, April 2009. Springer.
- [C17] R. ORTALE, E. RITACCO, **N. PELEKIS**, R. TRASARTI, G. COSTA, F. GIANNOTTI, G. MANCO, C. RENSO, Y. THEODORIDIS: “The DAEDALUS Framework: Progressive Querying and Mining of Movement Data”, poster paper, *Proceedings of the 16th ACM SIGSPATIAL Int’l Conference on Advances in Geographic Information Systems*, ACM-GIS’08, Irvine – CA, USA, November 2008. ACM Press.
- [C16] D. K. IAKOVIDIS, **N. PELEKIS**, E. KOTSIFAKOS, I. KOPANAKIS: “Intuitionistic Fuzzy Clustering with Applications in Computer Vision”, *Proceedings of the International Conference on Advanced Concepts for Intelligent Vision Systems*, ACIVS’08, LNCS 5259, pp. 764–774, Juan-les-Pins, France, 2008.
- [C15] R. ORTALE, E. RITACCO, **N. PELEKIS**, R. TRASARTI, G. COSTA, F. GIANNOTTI, G. MANCO, C. RENSO, Y. THEODORIDIS: “DAEDALUS: A knowledge discovery analysis framework for movement data”. *Proceedings of the 16th Italian Symposium on Advanced Database Systems*, SEBD’08, pp. 191-198, Mondello, Italy, 2008.
- [C14] E. FRENTZOS, **N. PELEKIS**, Y. THEODORIDIS: “Cost Models and Efficient Query Processing over Existentially Uncertain Spatial Data”, *Proceedings of the 12th Pan-Hellenic Conference on Informatics*, PCI’08, Samos, Greece, August 2008. IEEE CS Press.
- [C13] **N. PELEKIS**, E. FRENTZOS, N. GIATRAKOS, Y. THEODORIDIS: “HERMES: Aggregative LBS via a Trajectory DB Engine”, demo paper, *Proceedings of ACM SIGMOD Int’l Conference on Management of Data*, SIGMOD’08, Vancouver, BC, Canada, June 2008. ACM Press.
- [C12] G. MARKETOS, E. FRENTZOS, I. NTOUTSI, **N. PELEKIS**, A. RAFFAETA, Y. THEODORIDIS: “Building Real World Trajectory Warehouses”, *Proceedings of the 7th ACM Int’l Workshop on Data Engineering for Wireless and Mobile Access*, MobiDE’08, Vancouver, BC, Canada, June 2008. ACM Press.
- [C11] **N. PELEKIS**, I. KOPANAKIS, G. MARKETOS, I. NTOUTSI, G.L. ANDRIENKO, Y. THEODORIDIS: “Similarity Search in Trajectory Databases”, *Proceedings of the 14th Int’l Symposium on Temporal Representation and Reasoning*, TIME’07, Alicante, Spain, June 2007. IEEE CS Press.
- [C10] **N. PELEKIS**, S. VOSINAKIS, T. PANAYIOTOPOULOS, Y. THEODORIDIS: “Towards a Virtual Agent Control Architecture Using a Spatiotemporal Data Management Framework”, *Proceedings of the 4th International INTUITION Conference*, pp. 153-162, Athens, 2007.
- [C09] **N. PELEKIS**, I. KOPANAKIS, I. NTOUTSI, G. MARKETOS, Y. THEODORIDIS: “Mining Trajectory Databases via a Set of Distance Operators”, *Proceedings of ICDE Workshop on Spatio-Temporal Data Mining*, STDM’07, Istanbul, Turkey, April 2007. IEEE CS Press.
- [C08] S. VOSINAKIS, **N. PELEKIS**, Y. THEODORIDIS, AND T. PANAYIOTOPOULOS: “Handling Spatial Vagueness in Virtual Agent Control”. *Proceedings of the 2nd International Conference on Computer Graphics Theory and Applications*, GRAPP’07, Barcelona, Spain, March 2007. Volume GM/R. INSTICC.

- [C07] D. K. IAKOVIDIS, N. PELEKIS, H. KARANIKAS, E. KOTSIFAKOS, I. KOPANAKIS, Y. THEODORIDIS: “A Pattern Similarity Scheme for Medical Image Retrieval”, *Proceedings of the Int’l Special Topic Conference on Information Technology in Biomedicine*, ITAB’06, Ioannina, Greece, October 2006. IEEE Computer Society Press.
- [C06] H. KARANIKAS, N. PELEKIS, D. K. IAKOVIDIS, I. KOPANAKIS, T. MAVROUDAKIS, Y. THEODORIDIS: “MetaOn - Ontology Driven Metadata Construction and Management for Intelligent Search in Text and Image Collections”, *Proceedings of Int’l Workshop on Flexible Database and Information System Technology*, FlexDBIST’06, Krakow, Poland, September 2006. IEEE Computer Society Press.
- [C05] N. PELEKIS, Y. THEODORIDIS: “Boosting Location-Based Services with a Moving Object Database Engine”, *Proceedings of the 5th Int’l ACM Workshop on Data Engineering for Wireless and Mobile Access*, MobiDE’06, Chicago, IL, USA, June 2006. ACM Press.
- [C04] N. PELEKIS, Y. THEODORIDIS, S. VOSINAKIS, T. PANAYIOTOPOULOS: “Hermes – A Framework for Location-Based Data Management”, demo paper, *Proceedings of the 10th Int’l Conference on Extending Database Technology*, EDBT’06, Munich, Germany, March 2006. OpenProceedings.
- [C03] I. KOPANAKIS, S. KARAGIANNIS, N. PELEKIS, H. KARANIKAS: “3D Class-Preserving Projection Technique for the representation of N-Dimensional Classified Data and Association Rules”. *Proceedings of the 5th International Conference on Knowledge Management, I-KNOW’05*, Special Track on «Knowledge and Information Visualisation», Graz, Austria, June 29-July 1, 2005. Journal of Universal Computer Science.
- [C02] E. FRENTZOS, K. GRATSIAS, N. PELEKIS, Y. THEODORIDIS: “Nearest Neighbor Search on Moving Object Trajectories”, *Proceedings of the 9th Int’l Symposium on Spatial and Temporal Databases*, SSTD’05, Angra dos Reis, Brazil, August 2005. Springer.
- [C01] N. PELEKIS, B. THEODOULIDIS AND I. KOPANAKIS: “Fuzzy Miner: A Fuzzy System for Solving Pattern Classification Problems”, *Proceedings of the 1st Int’l EDBT Workshop on Pattern Representation and Management*, PaRMA’04, Heraklion-Crete, Greece, March, 2004. OpenProceedings.

- *ABSTRACTS, GREEK CONFERENCES*

- [N15] A. TRITSAROLIS, N. PELEKIS, K. BERETA, D. ZISSIS, Y. THEODORIDIS: “On Vessel Location Forecasting and the Effect of Federated Learning”, *Proceedings of the 18th Hellenic Data Management Symposium*, HDMS’24, Athens, Greece, 2024.
- [N14] A. TRITSAROLIS, B. MURRAY, N. PELEKIS, Y. THEODORIDIS: “Collision Risk Assessment and Forecasting on Maritime Data”. *Proceedings of the 18th Hellenic Data Management Symposium*, HDMS’24, Athens, Greece, 2024.
- [N13] A. KONSTANTINIDIS, G. CHATZIMILIOUDIS, D. ZEINALIPOUR-YAZTI, P. MPEIS, N. PELEKIS, AND Y. THEODORIDIS: “Privacy-Preserving Indoor Localization on Smartphones”, *Proceedings of the 14th Hellenic Data Management Symposium*, HDMS’16, Athens, Greece, 2016.
- [N12] D. KOPANAKI, N. PELEKIS, A. GKOUALALAS-DIVANIS, M. VODAS AND Y. THEODORIDIS: “A Framework for Mobility Pattern Mining and Privacy-Aware Querying of Trajectory Data”, *Proceedings of the 11th Hellenic Data Management Symposium*, HDMS’12, Chania, Greece, 2012.

- [N11] **N. PELEKIS**, I. KOPANAKIS, C. PANAGIOTAKIS AND Y. THEODORIDIS: “Unsupervised Trajectory Sampling”, *Proceedings of the 10th Hellenic Data Management Symposium HDMS’11*, Athens, Greece, 2011.
- [N10] **N. PELEKIS**, I. KOPANAKIS, E. KOTSIFAKOS, E. FRENTZOS AND Y. THEODORIDIS: “Clustering Trajectories of Moving Objects in an Uncertain World”, *Proceedings of the 9th Hellenic Data Management Symposium*, HDMS’10, Ayia Napa, Cyprus, 2010.
- [N09] G. MARKETOS, E. FRENTZOS, N. GIATRAKOS, I. NTOUTSI, **N. PELEKIS**, A. RAFFAETA AND Y. THEODORIDIS: “A Framework for Trajectory Data Warehousing”, *Proceedings of the 7th Hellenic Data Management Symposium*, HDMS’08, Heraklion, Crete, Greece, 2008.
- [N08] E. FANARA, G. MARKETOS, **N. PELEKIS** AND Y. THEODORIDIS: “Analyzing Polls and News Headlines Using Business Intelligence Techniques”, *Proceedings of the 20th National Conference of the Hellenic Company of Operational Research*, EEEE’08, Spetses, Greece, 2008.
- [N07] E. FRENTZOS, **N. PELEKIS**, N. GIATRAKOS AND Y. THEODORIDIS: “Identifying Unknown Border Lines from Historical Spatiotemporal Data: The DIACHORON Approach”, *Proceedings of the International Conference on Telecommunications & Multimedia*, TEMU’08, Ierapetra, Crete, Greece, 2008.
- [N06] **N. PELEKIS**, D. K. IAKOVIDIS, E. KOTSIFAKOS, H. KARANIKAS AND I. KOPANAKIS: “Intuitionistic Fuzzy Clustering to Information Retrieval from Cultural Databases”, *Proceedings of the 22nd International Conference on Operational Research*, Prague, Czech Republic, 2007.
- [N05] D.K. IAKOVIDIS, E. KOTSIFAKOS, **N. PELEKIS**, H. KARANIKAS, I. KOPANAKIS, T. MAVROUDAKIS, Y. THEODORIDIS: “Pattern-Based Retrieval of Cultural Heritage Images”, *Proceedings of the 12th Panhellenic Conference in Informatics*, Patra, May 2007.
- [N04] H. KARANIKAS, **N. PELEKIS**, D. K. IAKOVIDIS, I. KOPANAKIS, T. MAVROUDAKIS, Y. THEODORIDIS: “Multimedia Annotation System for Intelligent Search”, *Proceedings of Int’l Conference on Telecommunications & Multimedia*, TEMU’06, Heraklion-Crete, Greece, July 2006.
- [N03] I. KOPANAKIS, **N. PELEKIS**, H. KARANIKAS, T. MAVROUDAKIS: “Visual Techniques for the Interpretation of Data Mining Outcomes”, *Proceedings of the 10th Panhellenic Conference in Informatics*, PCI’05, LNCS 3746, pp. 25-35, Volos, Greece, 2005.
- [N02] H. KARANIKAS, **N. PELEKIS**, I. KOPANAKIS, T. MAVROUDAKIS: “Discovering Market Trends via Text Mining”, *Proceedings of the Scientific Congress “New Technologies & Marketing”*, pp.131-138, Ierapetra, Greece, 2005.
- [N01] I. KOPANAKIS, S. KARAGIANNIS, **N. PELEKIS**, H. KARANIKAS: “Bar Chart Form Visual Data Mining Model for the Representation of Association Rules”, *Proceedings of the International Conference on Telecommunications & Multimedia*, TEMU’05), Heraclion, Crete, Greece, 2005.

- *OTHER*

- [O05] C. DOULKERIDIS, **N. PELEKIS**, Y. THEODORIDIS, G. VOUIROS: “Big Data Management and Analytics for Mobility Forecasting in datAcron”, EuroPro: Big Data Management Challenges and Solutions in the Context of European Projects workshop organized in conjunction with the 20th Int’l Conf. on Extending Database Technology (EDBT), Venice, Italy, 2017.

- [O04] A. CHRISTODOULAKIS, H. KARANIKAS, A. BILLIRIS, E. THIREOS, **N. PELEKIS**: “Big data in health care - Assessment of the performance of Greek NHS hospitals using key performance and clinical workload indicators”, *Archives of Hellenic Medicine*, 33():1-9, 2016.
- [O03] **N. PELEKIS**, S. SIDERIDIS, P. TAMPAKIS, Y. THEODORIDIS: “Hermoupolis: A Semantic Trajectory Generator in the Data Science era”, *The SIGSPATIAL Special Newsletter of the Association for Computing Machinery, Special Interest Group on Spatial Information*, Vol. 7, Number 1, March 2015.
- [O02] M. VODAS, **N. PELEKIS**, Y. THEODORIDIS, C. RAY, V. KARCALETSIS, S. PETRIDIS, A. MILIOU: “Efficient AIS Data Processing for Environmentally Safe Shipping”, *SPOUDAI, Journal of Economics and Business*, Vol.63, Issue 3, 2013.
- [O01] B. ΒΕΡΥΚΙΟΣ, Α. ΓΚΟΥΛΑΛΑΣ-ΔΙΒΑΝΗΣ, Ι. ΘΕΟΔΩΡΙΔΗΣ, **Ν. ΠΕΛΕΚΗΣ**: “Μέθοδοι Προστασίας Ιδιωτικότητας σε Τροχιές Κινούμενων Αντικειμένων”, στο συλλογικό τόμο «*Προστασία της Ιδιωτικότητας και Τεχνολογίες Πληροφορικής και Επικοινωνιών*». Επιμ. έκδοση: Κ. Λαμπρινουδάκης κ.α., Εκδόσεις Παπασωτηρίου, 2010.