

Giannis Nikolentzos

CONTACT INFORMATION	University of Peloponnese Department of Informatics and Telecommunications Akadimaikou G.K. Vlachou 22100, Tripoli, Greece	<i>E-mail:</i> lastname@uop.gr <i>www:</i> users.uop.gr/~nikolentzos/
RESEARCH INTERESTS	graph representation learning, machine learning on graphs, graph mining, social network analysis, graph algorithms, learning with structured data, text mining, natural language processing	
ACADEMIC APPOINTMENTS	Assistant Professor , University of Peloponnese Department of Informatics and Telecommunications	Jan. 2024 to present
	Postdoctoral Researcher , École Polytechnique Computer Science Laboratory Participation in the AML-HELAS project (ANR-19-CHIA-0020) which focused on the development of advanced AI algorithms for different data formats including text, graphs and time series; Designed graph learning algorithms and graph generative models for medical data.	Jan. 2021 to Dec. 2023
	Research Engineer , Athens University of Economics and Business Department of Informatics Developed graph learning algorithms for image data and time series data.	Jan. 2020 to Dec. 2020
	Postdoctoral Researcher , École Polytechnique Computer Science Laboratory Participation in the ESIGMA project (ANR-17-CE23-0010) which used graph theory as a guideline to navigate the various structural aspects of graph data; Worked on the development of graph kernels which rely on basic principles from graph theory and theoretical algorithm design.	Jan. 2018 to Dec. 2019
	Research Engineer , École Polytechnique Computer Science Laboratory Participation in the OpenPaaS::NG project which developed next generation cloud-enabled collaborative applications; Worked on algorithms for automatic summarization of meeting transcriptions.	Apr. 2016 to Dec. 2017
	Research Assistant , Athena RC Institute for the Management of Information Systems Participation in the MEDA project which focused on the efficient management of Big Data; Worked on event summarization from tweet streams.	Jun. 2014 to Mar. 2016
EDUCATION	Athens University of Economics and Business , Athens, Greece Ph.D. in Computer Science, Jun. 2014 to Dec. 2017 <ul style="list-style-type: none">• Thesis Title: <i>Machine Learning on Graphs: Algorithms and Applications</i>• Advisor: Professor Michalis Vazirgiannis University of Southampton , Southampton, UK M.Sc. in Artificial Intelligence, Oct. 2012 to Oct. 2013 University of Patras , Patras, Greece Diploma in Electrical and Computer Engineering, Oct. 2005 to Jul. 2011	

AWARDS / HONORS	<p>BME Conference Fellowship 2023</p> <p>Travel grant to attend the ICML conference awarded by the Engineering for Health (E4H) interdisciplinary Center of Institut Polytechnique de Paris.</p> <p>Distinguished paper award 2018</p> <p>Received for a paper presented at the International Joint Conference on Artificial Intelligence (IJCAI).</p> <p>Scholarship towards Doctoral studies in Computer Science 2015</p> <p>Received scholarship from the Academy of Athens to complete PhD studies in Computer Science.</p> <p>Distinction awarded by the University of Southampton 2013</p> <p>Graduated 3rd out of approximately 50 students of my class.</p> <p>Awards for excellence in high school 2000-2005</p> <p>Awarded by the Greek Ministry of Education.</p>
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JOURNAL
PUBLICATIONS

- [1] Ennadir S., Nikolentzos G., Vazirgiannis M. and Boström H., “Generating graph perturbations to enhance the generalization of GNNs”, *AI Open*, Vol 5, pp. 216-223, (2024).
- [2] Kosma C., Nikolentzos G., Panagopoulos G., Steyaert J.M. and Vazirgiannis M., “Neural Ordinary Differential Equations for Modeling Epidemic Spreading”, *Transactions on Machine Learning Research*, (2023).
- [3] Nikolentzos G., Vazirgiannis M., Xypolopoulos C., Lingman M., and Brandt, E.G., “Synthetic electronic health records generated with variational graph autoencoders”, *npj Digital Medicine*, Vol 6, No 1, (2023).
- [4] Skianis K., Nikolentzos G., Gallix B., Thiebaut R., and Exarchakis G., “Predicting COVID-19 positivity and hospitalization with multi-scale graph neural networks”, *Scientific Reports*, Vol 13, No 1, (2023).
- [5] Nikolentzos G., Dasoulas G., and Vazirgiannis M., “Permute Me Softly: Learning Soft Permutations for Graph Representations”, *IEEE Transactions on Pattern Analysis and Machine Intelligence*, Vol 45, No 4, pp. 5087-5098, (2023).
- [6] Nikolentzos G., Siglidis G., and Vazirgiannis M., “Graph Kernels: A Survey”, *Journal of Artificial Intelligence Research*, Vol 72, pp. 943-1027 (2021).
- [7] Nikolentzos G., Dasoulas G. and Vazirgiannis M., “k-hop Graph Neural Networks”, *Neural Networks*, Vol 130, pp. 195-205, (2020).
- [8] Siglidis G., Nikolentzos G., Limnios S., Giatsidis C., Skianis K. and Vazirgiannis M., “GraKeL: A Graph Kernel Library in Python”, *Journal of Machine Learning Research*, Vol 21, No 54, pp. 1-5, (2020).
- [9] Nikolentzos G. and Vazirgiannis M., “Learning Structural Node Representations using Graph Kernels”, *IEEE Transactions on Knowledge and Data Engineering*, Vol 33, Issue 5, pp. 2045-2056, (2021).
- [10] Giatsidis C., Nikolentzos G., Zhang C., Tang J. and Vazirgiannis M., “Rooted Citation Graphs Density Metrics for Research Papers Influence Evaluation”, *Journal of Informetrics*, Vol 13, Issue 2, pp. 757-768, (2019).

- [11] Nakis N., Kosma C., Nikolentzos G., Chatzianastasis M., Evdaimon I., and Vazirgiannis M., “Signed Graph Autoencoder for Explainable and Polarization-Aware Network Embeddings”, *In Proceedings of the 28th International Conference on Artificial Intelligence and Statistics (AISTATS '25)* (To Appear), Mai Khao, Thailand, May 3-5th, 2025.
- [12] Nikolentzos G., Chatzianastasis M., and Vazirgiannis M., “What Do GNNs Actually Learn? Towards Understanding their Representations”, *In Proceedings of the 3rd Learning on Graphs Conference (LoG '24)*, online, November 26-29, 2024.
- [13] Ennadir S., Alkhatib A., Nikolentzos G., Vazirgiannis, M. and Boström H., “Unbound-Attack: Generating Unbounded Adversarial Attacks to Graph Neural Networks”, *In Proceedings of the 12th International Conference on Complex Networks and Their Applications (Complex Networks '23)*, pp. 100-111, Menton Riviera, France, November 28-30, 2023.
- [14] Chatzianastasis M., Nikolentzos G., and Vazirgiannis M., “Supervised Attention Using Homophily in Graph Neural Networks”, *In Proceedings of the 32nd International Conference on Artificial Neural Networks (ICANN '23)*, pp. 576-586, Heraklion, Greece, September 26-29, 2023.
- [15] Michel G., Nikolentzos G., Lutzeyer J., and Vazirgiannis M., “Path Neural Networks: Expressive and Accurate Graph Neural Networks”, *In Proceedings of the 40th International Conference on Machine Learning (ICML '23)*, pp. 24737-24755, Honolulu, USA, July 23-29, 2023.
- [16] Nikolentzos G., and Vazirgiannis M., “Geometric Random Walk Graph Neural Networks via Implicit Layers”, *In Proceedings of the 26th International Conference on Artificial Intelligence and Statistics (AISTATS '23)*, pp. 2035-2053, Valencia, Spain, April 25-27, 2023.
- [17] Nikolentzos G., and Vazirgiannis M., “Graph Alignment Kernels using Weisfeiler and Leman Hierarchies”, *In Proceedings of the 26th International Conference on Artificial Intelligence and Statistics (AISTATS '23)*, pp. 2019-2034, Valencia, Spain, April 25-27, 2023.
- [18] Nikolentzos G., Chatzianastasis M., and Vazirgiannis M., “Weisfeiler and Leman go Hyperbolic: Learning Distance Preserving Node Representations”, *In Proceedings of the 26th International Conference on Artificial Intelligence and Statistics (AISTATS '23')*, pp. 1037-1054, Valencia, Spain, April 25-27, 2023.
- [19] Kosma C., Nikolentzos G., and Vazirgiannis M., “Time Series Forecasting Models Copy the Past: How to Mitigate”, *In Proceedings of the 31st International Conference on Artificial Neural Networks (ICANN '22)*, pp. 366-378, Bristol, UK, September 6–9, 2022.
- [20] Chatzianastasis M., Nikolentzos G., and Vazirgiannis M., “Mass Enhanced Node Embeddings for Drug Repurposing”, *In Proceedings of the 12th Hellenic Conference on Artificial Intelligence (SETN '22)*, pp. 1-5, Corfu, Greece, September 7-9, 2022.
- [21] Xu N., Nikolentzos G., Vazirgiannis M., and Boström H., “Image Keypoint Matching Using Graph Neural Networks”, *In Proceedings of the 10th International Conference on Complex Networks and Their Applications (Complex Networks '22)*, pp. 441-451, Madrid, Spain, November 30 - December 2, 2021.
- [22] Nikolentzos G., Panagopoulos G. and Vazirgiannis M., “An Empirical Study of the Expressiveness of Graph Kernels and Graph Neural Networks”, *In Proceedings of the 30th International Conference on Artificial Neural Networks (ICANN '21)*, pp. 139-150, online, September 14-17, 2021.

- [23] Dasoulas G., Nikolentzos G., Scaman K., Virmaux A., and Vazirgiannis M., “Ego-based Entropy Measures for Structural Representations”, *In Proceedings of the 46th IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP '21)*, pp. 3210-3214, online, June 6-11, 2021.
- [24] Panagopoulos G., Nikolentzos G., and Vazirgiannis M., “Transfer Graph Neural Networks for Pandemic Forecasting”, *In Proceedings of the 35th AAAI Conference on Artificial Intelligence (AAAI '21)*, pp. 4838-4845, online, February 2-9, 2021.
- [25] Nikolentzos G., and Vazirgiannis M., “Random Walk Graph Neural Networks”, *In Proceedings of the 34th Conference on Neural Information Processing Systems (NeurIPS '20)*, pp. 16211-16222, online, December 6-12, 2020.
- [26] Nikolentzos G., Thomas M., Ramírez Rivera A., and Vazirgiannis M., “Image Classification Using Graph-Based Representations and Graph Neural Networks”, *In Proceedings of the 9th International Conference on Complex Networks and Their Applications (Complex Networks '20)*, pp. 142-153, online, December 1-3, 2020.
- [27] Rennard V., Nikolentzos G., and Vazirgiannis M., “Graph Auto-Encoders for Learning Edge Representations”, *In Proceedings of the 9th International Conference on Complex Networks and Their Applications (Complex Networks '20)*, pp. 117-129, online, December 1-3, 2020.
- [28] Wu C., Nikolentzos G., and Vazirgiannis M., “EvoNet: A Neural Network for Predicting the Evolution of Dynamic Graphs”, *In Proceedings of the 29th International Conference on Artificial Neural Networks (ICANN '20)*, pp. 594–606, online, 2020.
- [29] Skianis K., Nikolentzos G., Limnios S. and Vazirgiannis M., “Rep the Set: Neural Networks for Learning Set Representations”, *In Proceedings of the 23rd International Conference on Artificial Intelligence and Statistics (AISTATS '20)*, pp. 1410-1420, online, 2020.
- [30] Nikolentzos G., Tixier A. and Vazirgiannis M., “Message Passing Attention Networks for Document Understanding”, *In Proceedings of the 34th AAAI Conference on Artificial Intelligence (AAAI '20)*, pp. 8544-8551, New York, USA, February 7-12, 2020.
- [31] Wu C., Nikolentzos G. and Vazirgiannis M., “Matching Node Embeddings Using Valid Assignment Kernels”, *In Proceedings of the 8th International Conference on Complex Networks and Their Applications (Complex Networks '19)*, Vol 1, pp. 810-821, Lisbon, Portugal, December 10-12, 2019.
- [32] Tixier A., Nikolentzos G., Meladianos P. and Vazirgiannis M., “Graph Classification with 2D Convolutional Neural Networks”, *In Proceedings of the 28th International Conference on Artificial Neural Networks: Workshop and Special Sessions (ICANN '19)*, pp. 578-593, Munich, Germany, September 17-19, 2019.
- [33] Steenfatt N., Nikolentzos G., Vazirgiannis M. and Zhao Q., “Learning Structural Node Representations on Directed Graphs”, *In Proceedings of the 7th International Conference on Complex Networks and Their Applications (Complex Networks '18)*, pp. 132-144, Cambridge, United Kingdom, December 11-13, 2018.
- [34] Nikolentzos G. and Vazirgiannis M., “Enhancing Graph Kernels via Successive Embeddings”, *In Proceedings of the 27th International Conference on Information and Knowledge Management (CIKM '18)*, pp. 1583-1586, Turin, Italy, October 22-26, 2018.
- [35] Nikolentzos G., Meladianos P., Tixier A., Skianis K. and Vazirgiannis M., “Kernel Graph Convolutional Neural Networks”, *In Proceedings of the 27th International Conference on Artificial Neural Networks (ICANN '18)*, pp. 22-32, Rhodes, Greece, October 4-7, 2018.

- [36] Nikolentzos G., Meladianos P., Limnios S. and Vazirgiannis M., “A Degeneracy Framework for Graph Similarity”, *In Proceeding of the 27th International Joint Conference on Artificial Intelligence (IJCAI '18)*, pp. 2595-2601, Stockholm, Sweden, July 13-19, 2018.
- [37] Meladianos P., Xypolopoulos C., Nikolentzos G., and Vazirgiannis M., “An Optimization Approach for Sub-event Detection and Summarization in Twitter”, *In Proceedings of the 40th European Conference on Information Retrieval (ECIR '18)*, pp. 481-493, Grenoble, France, March 26-29, 2018.
- [38] Nikolentzos G., Meladianos P., Stavrakas Y. and Vazirgiannis M., “K-clique-graphs for Dense Subgraph Discovery”, *In Proceedings of the 2017 European Conference on Machine Learning and Principles and Practice of Knowledge Discovery (ECML-PKDD '17)*, pp. 617-633, Skopje, Fyrom, September 18-22, 2017.
- [39] Nikolentzos G., Meladianos P., Rousseau F., Stavrakas Y. and Vazirgiannis M., “Shortest-Path Graph Kernels for Document Similarity”, *In Proceedings of the 2017 Conference on Empirical Methods in Natural Language Processing (EMNLP '17)*, pp. 1890-1900, Copenhagen, Denmark, September 7-11, 2017.
- [40] Meladianos P., Tixier A., Nikolentzos G., and Vazirgiannis M., “Real-Time Keyword Extraction from Conversations”, *In Proceedings of the 15th European Chapter of the Association for Computational Linguistics (EACL '17)*, pp. 462-467, Valencia, Spain, April 3-7, 2017.
- [41] Nikolentzos G., Meladianos P., Rousseau F., Stavrakas Y. and Vazirgiannis M., “Multivariate Gaussian Document Representation from Word Embeddings for Text Categorization”, *In Proceedings of the 15th European Chapter of the Association for Computational Linguistics (EACL '17)*, pp. 450-455, Valencia, Spain, April 3-7, 2017.
- [42] Nikolentzos G., Meladianos P. and Vazirgiannis M., “Matching Node Embeddings for Graph Similarity”, *In Proceedings of the 31st AAAI Conference on Artificial Intelligence (AAAI '17)*, pp. 2429-2435, San Francisco, USA, February 4-9, 2017.
- [43] Meladianos P., Nikolentzos G., Rousseau F., Stavrakas Y. and Vazirgiannis M., “Degeneracy-based Real-Time Sub-Event Detection in Twitter Stream”, *In Proceedings of the 9th AAAI International Conference on Web and Social Media (ICWSM '15)*, pp. 248-257, Oxford, United Kingdom, May 26-29, 2015.
- BOOK
CHAPTERS
- [44] Nikolentzos G., Panagopoulos G., Evdaimon I. and Vazirgiannis M., “Can Author Collaboration Reveal Impact? The Case of h-index”, book chapter in *Predicting the Dynamics of Research Impact*, pp. 177-194, Springer International Publishing, 2021.
- WORKSHOP
PUBLICATIONS
- [45] Qabel A., Ennadir S., Nikolentzos G., Lutzeyer J., Chatzianastasis M., Boström H. and Vazirgiannis M., “Structure-Aware Antibiotic Resistance Classification Using Graph Neural Networks”, *In 3rd AI for Science workshop*, New Orleans, USA, December 2, 2022.
- TUTORIALS
- [46] Vazirgiannis M., Nikolentzos G. and Siglidis G., “Machine Learning on Graphs with Kernels”, *In Proceedings of the 28th International Conference on Information and Knowledge Management (CIKM '19)*, pp. 2983-2984, Beijing, China, November 3-7, 2019.
- [47] Vazirgiannis M., Malliaros F. and Nikolentzos G., “GraphRep: Boosting Text Mining, NLP and Information Retrieval with Graphs”, *In Proceedings of the 27th International Conference on Information and Knowledge Management (CIKM '18)*, pp. 2295-2296, Turin, Italy, October 22-26, 2018.

CONFERENCE
TALKS

- Title: “Mass Enhanced Node Embeddings for Drug Repurposing”
Presented at the 12th Hellenic Conference on Artificial Intelligence (SETN '22), Corfu, Greece, 2022.
- Title: “An Empirical Study of the Expressiveness of Graph Kernels and Graph Neural Networks”
Presented at the 30th International Conference on Artificial Neural Networks (ICANN '21), online, 2021.
- Title: “Image Classification Using Graph-Based Representations and Graph Neural Networks”
Presented at the 9th International Conference on Complex Networks and Their Applications (Complex Networks '20), online, 2020.
- Title: “Message Passing Attention Networks for Document Understanding”
Presented at the 34th AAAI Conference on Artificial Intelligence (AAAI '20), New York, USA, 2020.
- Title: “Graph Classification with 2D Convolutional Neural Networks”
Presented at the 28th International Conference on Artificial Neural Networks (ICANN '19), Munich, Germany, 2019.
- Title: “A Degeneracy Framework for Graph Similarity”
Presented at the 27th International Joint Conference on Artificial Intelligence (IJCAI '18), Stockholm, Sweden, 2018.
- Title: “Shortest-Path Graph Kernels for Document Similarity”
Presented at the 2017 Conference on Empirical Methods in Natural Language Processing (EMNLP '17), Copenhagen, Denmark, 2017.
- Title: “Matching Node Embeddings for Graph Similarity”
Presented at the 31st AAAI Conference on Artificial Intelligence (AAAI '17), San Francisco, USA, 2017.

INVITED TALKS

- Title: “*Feature-Conditioned Graph Generation using Latent Diffusion Models*”
Presented at the MBZUAI Workshop 2025 on Foundations and Advances in Generative AI, Paris, France, 2025.
- Title: “*Introduction to Graph Neural Networks*”
Presented at the HIAS summer school in Artificial Intelligence, Athens, Greece, 2024.
- Title: “*Towards more Intuitive Graph Neural Networks via Trainable Latent Graph Layers*”
Presented at the Learning on Graphs (LoG) local meetup in Paris, France, 2023.
- Title: “*What Do GNNs Actually Learn? Towards Understanding their Representations*”
Presented at the Complex Networks Analysis discussion group of the National Center for Scientific Research “Demokritos”, Athens, Greece, 2023.
- Title: “*Creating Synthetic Patient Trajectories with Graph Generative Models*”
Presented at the 20th International Workshop on Mining and Learning with Graphs, Turin, Italy, 2023.
- Title: “*Random Walk Graph Neural Networks*”
Presented at the Complex Networks Analysis discussion group of the National Center for Scientific Research “Demokritos”, Athens, Greece, 2021.
- Title: “*k-hop Graph Neural Networks*”
Presented at the Knowledge Engineering Group (KEG) of Tsinghua University, Beijing, China, 2019.

- Title: “*Learning on Graphs: The Problem of Graph Classification*”
Presented at the Noah’s Ark Lab of Huawei Technologies, Paris, France, 2018.
- Title: “*Using Graph Kernels to Address the Graph Similarity and Learning Problems*”
Presented at the kickoff meeting of the ESIGMA project, Paris, France, 2018.
- Title: “*Dense Subgraph Discovery and Applications*”
Presented at the Workshop on Social Media Processing, Changsha, China, 2016.

OTHER TALKS

- Title: “*Machine Learning on Graphs with Kernels*”
Tutorial presented at the 28th International Conference on Information and Knowledge Management, Beijing, China, 2019.

ADVISING AND MENTORING

Graduate Students

Gaspard Michel	2022
MSc Thesis director: Prof. Michalis Vazirgiannis	
MSc Thesis topic: “Path Neural Networks: Expressive and Accurate Graph Neural Networks”	
Virgile Rennard	2020
MSc Thesis director: Prof. Michalis Vazirgiannis	
MSc Thesis topic: “Graph Auto-Encoders for Learning Edge Representations”	
Michalis Thomas	2020
MSc Thesis director: Prof. Michalis Vazirgiannis	
MSc Thesis topic: “Graph Learning Algorithms for Object Detection”	
Armita Khajeh-Nassiri	2018
MSc Thesis director: Prof. Michalis Vazirgiannis	
MSc Thesis topic: “Hierarchical Attention Network for Graph Classification”	
Niklas Steenfatt	2018
MSc Thesis director: Prof. Michalis Vazirgiannis	
MSc Thesis topic: “Learning Structural Node Representations on Directed Graphs”	
Changmin Wu	2018
MSc Thesis director: Prof. Michalis Vazirgiannis	
MSc Thesis topic: “Matching Node Embeddings using Valid Assignment Kernels”	
Christos Xypolopoulos	2017
MSc Thesis director: Prof. Michalis Vazirgiannis	
MSc Thesis topic: “Applying Machine Learning Methods to Posts Collected from Twitter”	

TEACHING EXPERIENCE

University of Peloponnese, Tripoli, Greece

Instructor

2024 to present

- Artificial Intelligence
 - Undergraduate course.
 - Covered the following topics: Solving problems by searching (e.g., breadth-first search, depth-first search, A*-search), local search algorithms, constraint satisfaction problems, adversarial search and zero-sum games (e.g., minimax algorithm), propositional logic and first-order logic, probabilistic reasoning, bayesian networks.
- Calculus I and Linear Algebra
 - Undergraduate course.

- Covered the following topics: Real numbers, sequences, series, functions of one variable (limit, continuity etc.), derivatives, definite and indefinite integrals, power series, vectors, matrices, determinants, solving linear systems, vector spaces, bases, inner products, orthogonal spaces, characteristic polynomials, eigenvalues and eigenvectors, orthogonalization.

École Polytechnique, Palaiseau, France

Guest Lecturer

2021 to 2023

- Advanced Learning for Text and Graph Data (ALTeGraD)
 - Graduate-level course in text and graph mining
 - Main instructor: Prof. Michalis Vazirgiannis
 - Lectures: “Graph Mining” and “Graph Neural Networks”

Lab Instructor

2018 to 2023

- Advanced Learning for Text and Graph Data (ALTeGraD)
 - Graduate-level course in text and graph mining
 - Responsible for lecture and supervision of laboratory.
 - Students implemented community detection techniques, graph kernels for addressing graph classification tasks, unsupervised node embedding methods for node classification tasks, graph neural networks for learning node- and graph-level representations and graph generative models.

Athens University of Economics and Business, Athens, Greece

Instructor

2021 to present

- Data Science Challenge
 - The course covered practical topics in data management and data analysis, including data collection and processing, data visualization, statistical models and machine learning techniques, and big data approaches to create scalable solutions. In addition, student were introduced to recent methods from the field of natural language processing (e.g., large language models) and graph representation learning (e.g., graph neural networks).
 - Students had to participate in an in-class Kaggle competition. Last two challenges:
 - Domain Name Classification Challenge (<https://www.kaggle.com/c/inf342-datachallenge-2024>)
 - Publication Venue Prediction Challenge (<https://www.kaggle.com/c/inf342-datachallenge-2023>)

Lab Instructor

2014 to 2017

- Data Mining
 - Undergraduate course.
 - Developed Jupyter Notebooks for the practical sessions which covered the following topics: introductory concepts in machine learning (data preprocessing, feature selection, dimensionality reduction, exploratory analysis), supervised learning algorithms (linear regression, logistic regression, k -nn, decision trees), unsupervised learning algorithms (k -means clustering, EM algorithm, spectral clustering), neural networks/deep learning models, text mining (text categorization), and graph mining (node centrality measures, community detection, graph classification).
- Operations Research
 - Undergraduate course.
 - Prepared and delivered tutorial sessions (solved problems in front of the class) which covered the following topics: formulation of optimization problems (linear/non-linear

problems, convex/non-convex problems, continuous/integer/mixed programming), unconstrained optimization (derivative test, search algorithms), constrained optimization (Lagrange method, Karush-Kuhn-Tucker conditions, solution algorithms), linear programming (simplex algorithm, interior point methods), and dynamic programming (dynamic programming as a recursive procedure, recursive algorithm).

PROFESSIONAL
SERVICE

Grant Reviewer

- French National Research Agency (ANR)

International Journals

Editorial Service

- Transactions on Machine Learning Research

Reviewer

- IEEE Pattern Analysis and Machine Intelligence
- Journal of Machine Learning Research
- Neurocomputing
- Neural Networks
- IEEE Signal Processing Letters
- Machine Learning
- Information and Inference
- IEEE Transactions on Knowledge and Data Engineering
- Pattern Recognition
- Pattern Recognition Letters
- Transactions on Machine Learning Research (**Expert Reviewer**)
- Knowledge and Information Systems
- ACM Transactions on Knowledge Discovery from Data
- Scientific Reports
- PLOS One
- Expert Systems With Applications
- Information Sciences
- Applied Intelligence
- Applied Network Science
- Automation in Construction
- npj Digital Medicine
- Computers in Biology and Medicine
- IEEE Access
- The Computer Journal
- Natural Language Engineering
- Chemometrics and Intelligent Laboratory Systems
- Facta Universitatis, Series: Mathematics and Informatics
- IEEE Transactions on Cybernetics

International Conferences

Area Chair, Meta Reviewer

- International Conference on Machine Learning (ICML), 2025
- Conference on Neural Information Processing Systems (NeurIPS), 2024
- Annual Conference of the Association for Computational Linguistics (ACL), 2023
- Conference on Empirical Methods in Natural Language Processing (EMNLP), 2023

Reviewer

- Conference of the European Chapter of the Association for Computational Linguistics (EACL), 2021, 2023

- Conference on Empirical Methods in Natural Language Processing (EMNLP), 2020, 2021, 2022
- Annual Conference of the North American Chapter of the Association for Computational Linguistics (NAACL-HLT), 2021
- Annual Conference of the Association for Computational Linguistics (ACL), 2020, 2021, 2022
- Conference on Neural Information Processing Systems (NeurIPS), 2016, 2020, 2021, 2022, 2023 (**top reviewer**)
- International Conference on Machine Learning (ICML), 2021, 2022, 2023 2024
- International Conference on Artificial Intelligence and Statistics (AISTATS), 2022, 2023 (**top reviewer**), 2024, 2025
- AAAI Conference on Artificial Intelligence (AAAI), 2017, 2018, 2021 (**top 25% of Program Committee Members**), 2022
- International Conference on Learning Representations (ICLR), 2022, 2023, 2024 (**outstanding reviewer**), 2025
- International Joint Conference on Artificial Intelligence (IJCAI), 2017, 2024
- International Conference on Artificial Neural Networks (ICANN), 2018, 2019, 2021, 2022, 2023

Workshops

Reviewer

- Joint Workshop on Narrative Understanding, Storylines, and Events (NUSE), 2020
- Workshop on Graph-Based Methods for Natural Language Processing (TextGraphs), 2019 - 2020
- International Workshop on Mining Actionable Insights from Social Networks (MAISoN), 2018, 2019, 2021
- International Workshop on Assessing Impact and Merit in Science (AIMinScience), 2020
- International Workshop of Deep Learning for Graphs and Structured Data Embedding (DL4G-SDE), 2019
- International Workshop on Learning Representations for Big Networks (BigNet), 2018

SOFTWARE

- Contributed to the development and maintenance of the GraKeL library (available at: <https://github.com/ysig/GraKeL>). This is a Python package that includes implementations of several graph kernels. The package has received more than 600 stars from GitHub users.
- Code of most research papers available at his personal GitHub page: <https://github.com/giannisnik>.

LANGUAGES

Greek (Native); English; French (Intermediate)

PROFESSIONAL MEMBERSHIPS

Technical Chamber of Greece