Nikos Kanakaris

Curriculum Vitae

Personal details

Birth	August 17, 1993
Email	nikos.kanakaris89@gmail.com
GitHub	nkanak
Link	nkanak.github.io

Professional experience

Software Research Engineer *December 2017 - present*

University of Patras, Full-time

Topic: Designing and implementing the back-end system for the inPOINT research project (Contract periods: 01/12/2020-31/05/2021, 01/06/2021-31/12/2021, 01/01/2022-30/06/2022, 11/07/2022-30/09/2022)

Topic: Designing and implementing the collaboration and discourse environment for OpenBioC research project (Contract periods: 22/01/2019-30/06/2019, 02/07/2019-30/06/2020, 01/07/2020-31/12/2020, 01/01/2021-30/06/2021, 08/07/2021-31/12/2021)

Topic: Working on an information system that monitors smart devices on cruise ships to provide maximum energy savings. ECLiPSe research project (Contract period: 14/05/2019-31/12/2019)

Topic: Implementing the personalization and user profiling algorithms for MyCorridor European research project (Contract periods: 01/12/2017-31/12/2018, 01/01/2020-31/05/2020)

Technologies: Docker, Python, Python Eve, Flask, FastAPI, Django, MongoDB, Cytoscape.js, Neo4j, PostgreSQL, graph databases, knowledge graphs, discourse graphs, discourse representation, argumentation, personalization algorithms, recommender systems, machine learning techniques, data clustering

Senior AI Engineer *January 2019 - September 2019*

Mission-X, Full-time

Topic: Contributing to the design and implementation of the back-end system of the AI service as well as the database schema of the platform

Topic: Designing and calculating metrics and indices of the platform, including the 'value for money' metric, the 'chance of success' metric, the 'employee performance' index, the 'work balance team' index, the 'relevance of employee' and the 'allocation balance' index

Topic: Designing and implementing algorithms for prediction and automation, including automated prioritization of tasks (both for a team and each individual) based on dependency graphs and importance indices, prediction of the total project duration, provision of team insights (e.g. number of action items per user, equal distribution, average difficulty, past vs future workload), identification of highly dependent and critical tasks

Technologies: Docker, Python, Flask, Google App Engine, Google Cloud Platform, MongoDB, scikit-learn, Machine Learning, NLP, NLTK, NetworkX

Software Engineer *February 2016 - August 2017*

Programize LLC, Full-time

Topic: Converting an already existing financial model from Microsoft Excel to Python

Topic: Contributing to the automization of the process to convert Microsoft excel workbooks to Python

Topic: Implementing the back-end system for Litta mobile application
Topic: Implementing the main mobile hybrid and back-end application for Global Showcases
Topic: Adding responsive functionality to the official website for VForVacation
Topic: Contributing to the front-end and back-end internal financial application for SunPower
Topic: Implementing an Internet Explorer extension for OnionID
Technologies: Docker, Python, JavaScript, C#, C++, AngularJS, Flask, Node.js, PostgreSQL, Apache Cordova, MySQL, BHO IE, scipy, py2exe

Junior Software Engineer *November 2015 - May 2016*
Software Competitiveness International S.A. (SoftCom International), Full-time
Working for a German Automotive Industry under an NDA, area: Navigation
Topic: Implementing the middleware component that facilitates the front-end and back-end software layers
Technologies: C++, Python, Lua, XML
Tools and Standards: GIT, Jira, MISRA, Cmake, ISO 9001, ISO 27001

Junior Software Engineer *July 2015 - October 2015*
Software Competitiveness International S.A. (SoftCom International), Internship
Working for a Space Industry under an NDA, area: preventive performance monitoring
Topic: Researching for an alternative algorithm for hierarchical clustering
Technologies: C++, Java, machine learning techniques, data clustering

Freelance Personal Projects

Caper Co. *June 2017 - present*
Subject: Commercial system
Topic: Designing and implementing the back-end, the front-end and the CMS system for Caper Co., Caper Co. B2B, Food Caper Co. and Food Caper Co. B2B
Topic: Performing statistical analyses to identify and engage candidate customers
Topic: Building machine learning models to perform demand forecasting
Technologies: Angular.io, React.js, Svelte, Material Design, Django, Django REST framework, FastAPI, PostgreSQL, Docker, Braintree and myPOS payments, TensorFlow, Keras, scikit-learn

Education

PhD. Mechanical Engineering & Aeronautics *February 2018 - December 2022*
University of Patras
Laboratory: Industrial Management and Information Systems
Specialization: Graph Mining, Natural Language Processing, Text Representations
Subject: *Graph-based knowledge representation and extraction from unstructured textual data*
Supervisor: Nikos Karacapilidis

BSc. Informatics & Telematics *September 2011 - June 2016*
Harokopio University of Athens (8.5/10)
Specialization: Computer Software & Systems
Thesis: *Parallelization of "burn scar mapping" algorithms - Παραλληλοποίηση αλγορίθμων χαρτογράφησης καμένων εκτάσεων σε δορυφορικά δεδομένα* [Thesis] [Presentation]
Thesis Technologies: Digital Image Processing, Parallel Programming, Python, MPI
Supervisor: Dimitrios Michail

Skills

Languages: Greek (native), English (fluent)

Programming Languages: C/C++, Python/Cython, JavaScript/Node.js/TypeScript, Julia, Java, LaTeX

Databases: PostgreSQL, MySQL, SQLite, Neo4j, MongoDB

Computer Science: Machine Learning, Natural Language Processing, Graph Mining, Graph Theory, Recommender Systems, Digital Image Processing, Parallel Programming, Embedded Systems

Technologies/Tools/Platforms: PyTorch Geometric, TensorFlow, Keras, scikit-learn, pandas, Docker, Git

Other: Autodesk Fusion 360, 3D printing, Electronics

Interests

natural language processing, graph mining, graph-based text representations, graph neural networks, machine learning, business intelligence, AI-guided project management, graph theory, algorithms, parallel programming, embedded systems, IoT

Hobbies

IoT, motorbikes, 3D printing, CAD, reading books, electronics, RC cars, gaming, basketball, swimming

Other Activities

Manuscript/Book Reviewer @ Manning Publications:

- Julia for Data Analysis by Bogumił Kamiński
- Julia as a Second Language by Erik Engheim
- Deep Learning with Python, Second Edition by François Chollet
- Real-World Natural Language Processing by Masato Hagiwara
- TensorFlow 2.0 in Action by Thushan Ganegedara
- Transfer Learning for Natural Language Processing by Paul Azunre
- Machine Learning for Business by Doug Hudgeon and Richard Nichol
- Succeeding with AI by Veljko Krunic

Reviewer: Project Management Journal (PMJ), Applied Sciences MDPI, Information MDPI, Atmosphere MDPI, PLOS ONE, Electronics MDPI

Publications

Note: * denotes first authorship.

1. **N. Kanakaris***, I. Siachos and N. Karacapilidis: Is it a bug or a feature? Identifying software bugs using graph attention networks. International Conference on Tools with Artificial Intelligence (ICTAI), 2022. (to appear)
2. **N. Kanakaris*** and N. Karacapilidis: Predicting prices of Airbnb listings via Graph Neural Networks and Document Embeddings: The case of the island of Santorini. International Conference on ENTERprise Information Systems (CENTERIS), 2022. (to appear)
3. **N. Kanakaris***, D. Michail and I. Varlamis: A comparative survey of graph databases and software for social network analytics: The link prediction perspective. Book chapter for Graph Databases and their use in social media and smart cities, Science Publishers and CRC Press, Taylor & Francis Group, 2022. (to appear)
4. D. Michail, **N. Kanakaris** and I. Varlamis: Detection of fake news campaigns using graph convolutional networks. International Journal of Information Management Data Insights. 2, 100104, 2022. (link)
5. **N. Kanakaris***, N. Giarelis, I. Siachos and N. Karacapilidis: Making personnel selection smarter through word embeddings: A graph-based approach. Machine Learning with Applications, 100214, 2021, doi: 10.1016/j.mlwa.2021.100214. (link)
6. A. Kanterakis, **N. Kanakaris**, M. Koutoulakis, K. Pitianou, N. Karacapilidis, L. Koumakis and G. Potamias: Converting Biomedical Text Annotated Resources into FAIR Research Objects with an Open Science Platform. Applied Sciences, Vol. 11, No 20, 9648, 2021, doi: 10.3390/app11209648. (link)
7. **N. Kanakaris***, N. Giarelis, I. Siachos and N. Karacapilidis: Shall I Work with Them? A Knowledge Graph-Based Approach for Predicting Future Research Collaborations. Entropy, Vol. 23, No 6, 664, 2021, doi: 10.3390/e23060664. (link)
8. N. Giarelis, **N. Kanakaris** and N. Karacapilidis: Medical Knowledge Graphs in the Discovery of Future Research Collaborations. In: Chee-Peng Lim, Ashlesha Vaidya, Kiran Jain, Virag U Mahorkar, Lakhmi C. Jain (eds.), Handbook of Artificial Intelligence in Healthcare. Springer, 2021 (link).
9. N. Giarelis, **N. Kanakaris** and N. Karacapilidis: A comparative assessment of state-of-the-art methods for multilingual unsupervised keyphrase extraction. In: I. Maglogiannis, J. Macintyre and L. Iliadis (eds.), Proceedings of the 17th International Conference on Artificial Intelligence Applications and Innovations (AIAI 2021), Crete, Greece, June 25-27, 2021, IFIP Advances in Information and Communication Technology, Vol. 627, pp. 635-645, doi: 10.1007/978-3-030-79150-6_50.
10. N. Giarelis, **N. Kanakaris*** and N. Karacapilidis: On the utilization of structural and textual information of a scientific knowledge graph to discover future research collaborations: a link prediction perspective. In: A. Appice, G. Tsoumakas, Y. Manolopoulos and S. Matwin (eds.), Proceedings of the 23rd International Conference on Discovery Science (DS 2020), Online Conference, October 19-21, 2020, Springer, Cham, Switzerland, Lecture Notes in Artificial Intelligence, Vol. 12323, pp. 437-450, doi: 10.1007/978-3-030-61527-7_29. (link)
11. N. Giarelis, **N. Kanakaris*** and N. Karacapilidis: An innovative graph-based approach to advance feature selection from multiple textual documents. In: Maglogiannis I., Iliadis L., Pimenidis E. (eds), Artificial Intelligence Applications and Innovations - Proceedings of the 16th International Conference on Artificial Intelligence Applications and Innovations (AIAI 2020), Halkidiki, Greece, June 5-7, 2020, Springer, Cham, IFIP Advances in Information and Communication Technology, Vol 583, pp. 96-106, doi: 10.1007/978-3-030-49161-1_9. (link)
12. N. Giarelis, **N. Kanakaris*** and N. Karacapilidis: On a novel representation of mul-

tiple textual documents in a single graph. In: I. Czarnowski, R.J. Howlett and L.C.Jain (eds.), Intelligent Decision Technologies - Proceedings of the 12th KES International Conference on Intelligent Decision Technologies (KES-IDT 2020), Split, Croatia, June 17-19, 2020, Springer, Singapore, Smart Innovation, Systems and Technologies, Vol. 193, pp. 105-115, doi: 10.1007/978-981-15-5925-9_9. (link)
13. **N. Kanakaris***, N. Karacapilidis and G. Kournetas: On the exploitation of textual descriptions for a better-informed task assignment process. In: Proceedings of the 9th International Conference on Operations Research and Enterprise Systems (ICORES 2020), Valletta, Malta, February 22-24, 2020, Science and Technology Publications, pp. 304-310, DOI: 10.5220/0009151603040310. (link)
14. **N. Kanakaris***, N. Karacapilidis, G. Kournetas and A. Lazanas: Combining Machine Learning and Operations Research Methods to Advance the Project Management Practice. In: Parlier G., Liberatore F., Demange M. (eds), Operations Research and Enterprise Systems. Communications in Computer and Information Science, Vol. 1162. Springer, Cham, 2020, pp. 135-155, DOI: 10.1007/978-3-030-37584-3_7. (link)
15. A. Kanterakis, G. Iatraki, K. Pityanou, L. Koumakis, **N. Kanakaris**, N. Karacapilidis and G. Potamias: Towards Reproducible Bioinformatics: The OpenBio-C Scientific Workflow Environment. In: Proceedings of the 19th IEEE International Conference on Bioinformatics and Bioengineering (BIBE 2019), Athens, Greece, October 28-30, 2019, pp. 221-226. (link)
16. **N. Kanakaris***, N. Karacapilidis and A. Lazanas: On the advancement of Project Management through a flexible integration of Machine Learning and Operations Research tools. In: Proceedings of the 8th International Conference on Operations Research and Enterprise Systems (ICORES 2019), Prague, Czech Republic, February 19-21, 2019, Science and Technology Publications, pp. 362-369, DOI: 10.5220/0007387103620369. (link)