Emmanouil (Manos) Kariotakis

Geldenaaksebaan 122, Leuven, Belgium, 3001
+30 6949563453 ◇ emmanouil.kariotakis@kuleuven.be ◇ Google Scholar ◇ LinkedIn ◇ Website

Education

KU Leuven Sep 2023 - present
Doctoral Programme in Engineering Science (PhD)
Department of Electrical Engineering (ESAT)
Advisor: Aritra Konar

Technical University of Crete (TUC) Sep 2017 - Oct 2022
BSc & MEng in Electrical and Computer Engineering
Advisor: Aggelos Bletsas
Grade: 9.36/10 *(top 1% of total school's graduates as of Oct 2022)*
Summa cum laude

Research Interests

Graph Machine Learning, Algorithmic Fairness, Theoretical Machine Learning, Optimization, Signal Processing

Experience

PhD Researcher Sep 2023 - present
STADIUS Center for Dynamical Systems, Signal Processing and Data Analytics - ESAT, KU Leuven
- Exploring Algorithmic Fairness in Graph Machine Learning

Research Assistant Nov 2022 - Aug 2023
Signal Processing Laboratory, Institute of Computer Science - FORTH
- Design and study of a system that leverages sparsity across input and intermediate layers of a neural network that gets trained and operates in a distributed manner by resource-constrained workers.

Advisors: Grigorios Tsagkatakis, Anastasios Kyrillidis (Rice University)

Undergrad Research Assistant Mar 2022 - Sep 2022
Telecommunication Systems Research Institute (TSI), TUC
- Research on asynchronous, in-network processing with probabilistic graphical model (PGM)-based inference algorithms.

Research Intern Jul 2020 - Aug 2020
Signal Processing Laboratory, Institute of Computer Science - FORTH

Publications

- E. Kariotakis, A. Bodard, P. Patrinos, A. Konar, "Optimal Quasi-Clique Detection via Lasry-Lions Double Envelopes", in IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), 2026.
- E. Kariotakis, N.D. Sidiropoulos, A. Konar, "Fairness-Aware Dense Subgraph Discovery", in Transactions on Machine Learning Research, 2025.
- E. Kariotakis, G. Tsagkatakis, P. Tsakalides, A. Kyrillidis, "Leveraging Sparse Input and Sparse Models: Efficient Distributed Learning in Resource-Constrained Environments", in Conference on Parsimony and Learning (CPAL). PMLR, 2024.
- E. Kariotakis and A. Bletsas, "Probabilistic asynchronous inference in wireless networks with spectral clustering," in IEEE EUSIPCO, 2023.

Preprints

- E. Kariotakis, A. Konar, "FairRARI: A Plug and Play Framework for Fairness-Aware PageRank", arXiv:2602.08589.

Workshops - Symposiums

- E. Kariotakis, N.D. Sidiropoulos, A. Konar, "Fairness-Aware Dense Subgraph Discovery", in the First Greeks in AI Symposium, Athens, Greece, 2025.
- E. Kariotakis, N.D. Sidiropoulos, A. Konar, "Fairness-Regulated Dense Subgraph Discovery", in the Fourth European Workshop on Algorithmic Fairness, Eindhoven, The Netherlands, 2025.

Teaching Assistantship

B-KUL-H0O99a – Mining and Learning on Graphs Spring 2025, 2026
Faculty of Engineering Science, KU Leuven

B-KUL-I0D38b – Linear Algebra Fall 2024, 2025
Faculty of Engineering Science, KU Leuven

CS317 – Applied Stochastic Processes Spring 2023
Computer Science Department, University of Crete

CS217 – Probability Theory Fall 2022
Computer Science Department, University of Crete

Honors & Awards

Summa cum laude Oct 2022
Technical University of Crete

Skills

Technical Skills Python, Matlab, C++, LaTeX, Git
Languages English (fluent), French (A2), Greek (native)

Activities

- Volunteer at 2023 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)
- Degree in Music Harmony, June 2016
- Playing the piano and the guitar