Marios A. Papachristou (Last Updated: January 25, 2023)

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Areas

Machine Learning, Data Mining, Algorithms, Social and Information Networks

EDUCATION

Cornell University

Ph.D. Candidate in Computer Science (GPA: 4.0/4.0), Minor: Applied Math

- Advisor: Jon Kleinberg

- Relevant Coursework: Analysis of Algorithms, Information Networks, Numerical Methods for Data Science, Design of Online Marketplaces, ML Theory

M.S. in Computer Science, Minor: Applied Math (GPA: 4.0/4.0)

2020-2022

National Technical University of Athens

2015-2020

Diploma in ECE (GPA: 9.49/10.00). Major: Computer Science.

- Advisor: Dimitris Fotakis

Publications

- 1. Marios Papachristou, Amin Rahimian. "Cascading Failures, Power laws and Resiliency of Production Networks". Under review. 2023.
- 2. Marios Papachristou, Sid Banerjee, Jon Kleinberg. "Dynamic Interventions for Networked Contagions". WWW 2023. [preprint] [code] [poster]
- 3. Marios Papachristou, Rishab Goel, Frank Portman, Matt Miller, Rong Jin. "GLINKX: A Scalable Unified Framework for Homophilous and Heterophilous Graphs". NeurIPS workshop on Graph Learning Frontiers (GLFrontriers), 2022. [preprint] [poster] [workshop]
- 4. Marios Papachristou, Jon Kleinberg. "Core-periphery Models for Hypergraphs". KDD 2022.

[paper] [code] [data] [slides] [poster]

5. Marios Papachristou, Jon Kleinberg. "Allocating Stimulus Checks in Times of Crisis". WWW 2022. [preprint] [code] [paper] [talk] [slides]

6. Marios Papachristou. "Sublinear Domination and Core-periphery Networks". Scientific Reports (Nature), 2021.

[paper] [code]

7. ^{\alpha\beta} Apostolos Chalkis, Vissarion Fisikopoulos, **Marios Papachristou**, Elias Tsigaridas. "Truncated Log-concave Sampling with Reflective Hamiltonian Monte Carlo". Minor Revision at the ACM Transactions on Mathematical Software, 2021.

[preprint] [code]

- 8. Marios Papachristou, Dimitris Fotakis. "Stochastic Opinion Dynamics for User Interest Prediction in Online Social Networks". Preprint, 2020. [preprint]
- 9. Marios Papachristou. "Software clusterings with vector semantics and the call graph". ESEC/FSE 2019.

[paper] [code] [data] (ESEC/FSE Student Research Competition Finalist Paper)

10. Vasilis Kostakis*, and Marios Papachristou*. "Commons-based peer production and digital fabrication: The case of a RepRap-based, Lego-built 3D printingmilling machine". Telematics and Informatics, 2014. [paper]

Research
EXPERIENCE

Twitter Cortex (Research Internship)

May 2022 - August 2022

Research on scalable machine learning on graphs. Development of a simple scalable method for node classification in homophilous and heterophilous graphs.
 Paper and US patent submitted.

Cornell University (Graduate Research Assistant)

May 2021 -

- Thesis research. Advisor: Jon Kleinberg.

GeomScale Organization

May 2020 -

 Part-time research on sampling from truncated log-concave densities, and convex optimization, working on the volesti open-source package.

Business Analytics Lab (Undergraduate Researcher)

2018 - 2020

 Project: SADE. Architecture recovery via call graphs, source code embeddings, and clustering methods.

Hellenic Center for Marine Research

June 2014 - August 2014

June 2020- August 2020

P2P Lab (Remote Research Associate)

2013-2014

OTHER EXPERIENCE

Google Summer of Code 2020 (GeomScale)

Project: Sampling from high-dimensional truncated log-concave densities.
 [code] [talk1] [talk2]

Google Summer of Code 2018 (GFOSS-OTA)

April 2018–September 2018

Project: 3gm. Automated codification of Greek Legislation.
 [code] [data] [talk]

Ratle (Co-founder)

October 2017-October 2018

TEACHING ASSISTANTSHIP

 $\,$ – Discrete Mathematics (4th Semester, NTUA)

Spring 2017

2015

Programming Techniques (2nd Semester, NTUA)
 Introduction to Computer Programming (1st Semester, NTUA)
 Fall 2016, Fall 2017

Honors & Awards

- LinkedIn Ph.D. Fellowship (14.8% acceptance rate)

 Gerondelis Scholarship

 A.C. Leventis Scholarship (12.5% acceptance rate)
- A.G. Leventis Scholarship (12.5% acceptance rate)
 Chateaubriand Fellowship (declined)
 Cornell Fellowship
 Thomaidion Award
 2022
 2020
 2019
- ESEC/FSE 2019 ACM Student Research Competition Finalist 2019
- 4th (out of 93) in International Space Engineering Competition (CanSat) 2019
 2nd Award at the "be finnovative 2.0 accelerator" 2018
- 1st Award at "Crowdhackathon Fintech #2"
 2017
 Top %1 worldwide in IEEEXtreme 11.0 Programming Competition
 Touramanoglu Scholarship
 2015
- "The Great Moment of Education" Scholarship

SERVICE

- Program Committee. FAccT '22
- Reviewer. ECML-PKDD '23, GLFrontiers@NeurIPS '22, JOSS, WHMD@NeurIPS '21, OR Spectrum, Machine Learning
- *Mentorship:* Google Summer of Code (2019-), Cornell Undergraduate AI Group (2022-), Student-applicant support program at Cornell CS (2022).