Marios A. Papachristou (Last Updated: February 6, 2023)

Contact Information

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

Education

Cornell University *2020 – exp. 2026*

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. [αβ]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 printing-milling machine". *Telematics and Informatics*, 2014.
    [paper]

$^{\alpha\beta}$= alphabetical order, * = equal contribution

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*

P2P Lab (Remote Research Associate) *2013–2014*

Other Experience

Google Summer of Code 2020 (GeomScale) *June 2020– August 2020*
- *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 Assistantships

- The Structure of Information Networks (PhD-level, Cornell) *Spring 2023*
- Discrete Mathematics (NTUA) *Spring 2017*
- Programming Techniques (NTUA) *Spring 2016*
- Introduction to Computer Programming (NTUA) *Fall 2016, Fall 2017*

Honors & Awards

- LinkedIn Ph.D. Fellowship (14.8% acceptance rate) *2022*
- Gerondelis Scholarship *2022*
- A.G. Leventis Scholarship (12.5% acceptance rate) *2022*
- Chateaubriand Fellowship *(declined)* *2022*
- Cornell Fellowship *2020*
- Thomaidion Award *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 *2017*
- Touramanoglu Scholarship *2015*
- "The Great Moment of Education" Scholarship *2015*

Service

- *Program Committee.* FAccT '22
- *Reviewer.* KDD '23, 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).