

Marios Papachristou

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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*), 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)* *2020 – 2022*

National Technical University of Athens *2015 – 2020*
Diploma in ECE (*GPA: 9.49/10.00*). Major: *Computer Science*.
– *Advisor:* Dimitris Fotakis

PUBLICATIONS
[Google Scholar Profile](#)
 $\alpha\beta$ = alphabetical order,
* = equal contribution

1. **Marios Papachristou**, Amin Rahimian. “Production Networks Resilience: Cascading Failures, Power Laws and Optimal Interventions”. *Under review. Poster to be presented at the ACM Conference of Economics and Computation*. 2023. [\[preprint\]](#) [\[code\]](#) [\[slides\]](#)
2. **Marios Papachristou**, Sid Banerjee, Jon Kleinberg, “Optimal Resource Allocation for Remediating Networked Contagions”. *Under review*. 2023. This paper incorporates and extends our previous papers: [link](#) and [link](#). [\[slides\]](#)
3. **Marios Papachristou**, Sid Banerjee, Jon Kleinberg. “Dynamic Interventions for Networked Contagions”. *ACM Web Conference (WWW) 2023*. [\[preprint\]](#) [\[code\]](#) [\[poster\]](#) [\[paper\]](#) [\[slides\]](#)
4. **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 (GLFrontiers)*, 2022. [\[preprint\]](#) [\[poster\]](#) [\[workshop\]](#)
5. **Marios Papachristou**, Jon Kleinberg. “Core-periphery Models for Hypergraphs”. *ACM SIGKDD Intl. Conf. on Knowledge Discovery and Data Mining (KDD) 2022*. [\[paper\]](#) [\[code\]](#) [\[data\]](#) [\[slides\]](#) [\[poster\]](#)
6. **Marios Papachristou**, Jon Kleinberg. “Allocating Stimulus Checks in Times of Crisis”. *ACM Web Conference (WWW) 2022*. [\[preprint\]](#) [\[code\]](#) [\[paper\]](#) [\[talk\]](#) [\[slides\]](#) [\[news\]](#)
7. **Marios Papachristou**. “Sublinear Domination and Core-periphery Networks”. *Scientific Reports (Nature)*, 2021. [\[paper\]](#) [\[code\]](#)
8. $\alpha\beta$ Apostolos Chalkis, Vissarion Fisikopoulos, **Marios Papachristou**, Elias Tsigaridas. “Truncated Log-concave Sampling for Convex Bodies with Reflective Hamiltonian Monte Carlo”. *ACM Transactions on Mathematical Software*, 2023. This paper incorporates and supersedes our previous [preprint](#). [\[paper\]](#) [\[code\]](#)

9. **Marios Papachristou**, Dimitris Fotakis. “Stochastic Opinion Dynamics for User Interest Prediction in Online Social Networks”. *Preprint*, 2020. [\[preprint\]](#)
10. **Marios Papachristou**. “Software clusterings with vector semantics and the call graph”. *ACM Joint Meeting on European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE) 2019*. [\[paper\]](#) [\[code\]](#) [\[data\]](#) (*ESEC/FSE Student Research Competition Finalist Paper*)
11. 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. [\[paper\]](#)

RESEARCH EXPERIENCE

Microsoft Research (Office of Applied Research) *May 2023 –*
– Large Language Models (LLMs) to increase productivity in organizations.

Twitter Cortex Applied Research *May 2022 – August 2022*
– Scalable Graph Machine Learning on graphs.

Cornell University *May 2021 – May 2022*
– Graduate Research Assistant. 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 *2018 – 2020*
– *Project: SADE*. Architecture recovery via call graphs, source code embeddings, and clustering methods.

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.
[\[code\]](#) [\[data\]](#) [\[talk\]](#)

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

OTHER EXPERIENCE

Rattle (Co-founder) *October 2017–October 2018*

TEACHING EXPERIENCE

- 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 IEEEExtreme 11.0 Programming Competition 2017
- Touramanoglu Scholarship 2015
- “The Great Moment of Education” Scholarship 2015

TALKS & PRESENTATIONS

- ***Resource Allocation in a Financial Contagion Environment***
 - CS6850 (Cornell; guest lecture) April 2023
 - Cornell Theory Seminar November 2022
- ***Dynamic Interventions for Networked Contagions***
 - ACM Web Conference April 2023
 - ACM Conference on Equity and Access in Algorithms, Mechanisms, and Optimization October 2022
- ***Core-periphery Models for Hypergraphs***
 - ACM Conference on Knowledge Discovery and Data Mining August 2022
- ***GLINKX: A Scalable Unified Framework for Homophilous and Heterophilous Graphs***
 - NeurIPS Workshop on Graph Learning Frontiers December 2022
 - Twitter Machine Learning Seminar August 2022
- ***Allocating Stimulus Checks in Times of Crisis***
 - ACM Web Conference April 2022
 - ACM Conference on Equity and Access in Algorithms, Mechanisms, and Optimization October 2021
- ***Sampling from Truncated High Dimensional Logconcave Densities***
 - PyData Global December 2020
- ***Software Clusterings with Vector Semantics and the Call Graph***
 - ACM Joint Meeting on European Software Engineering Conference and Symposium on the Foundations of Software Engineering August 2019

SERVICE

- ***Program Committee***
 - ACM Conference on Fairness Accountability and Transparency (FAccT) 2022
 - ACM Conference on Knowledge Discovery and Data Mining (KDD) 2023
- ***Reviewing***
 - European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD) 2023
 - Machine Learning (Springer)
 - NeurIPS 2022 Workshop on Graph Learning Frontiers (GLFrontiers) 2022
 - NeurIPS 2021 Workshop on Human and Machine Decisions 2021–
 - Journal of Open Source Software 2021–
- ***Mentorship***
 - Student-applicant Support Program at Cornell CIS 2022
 - Cornell Undergraduate AI Group 2022–
 - Google Summer of Code 2019–2022

LAST UPDATED

June 14, 2023