

Marios Papachristou

CONTACT INFORMATION	E-mail	papachristoumarios@cs.cornell.edu
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AREAS Machine Learning, Data Mining, Algorithms, Social and Information Networks

EDUCATION **Cornell University** 2020 – exp. 2026
Ph.D. in Computer Science (*GPA: 4.0*), Minor: *Applied Mathematics*
– *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 (*GPA: 4.0*) 2020 – 2022

National Technical University of Athens 2015 – 2020
Diploma in ECE (*GPA: 9.49/10.00 – top 2%*). Major: *Computer Science*.
– *Advisor*: Dimitris Fotakis

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

1. **Marios Papachristou**, Amin Rahimian. “Differentially Private Distributed Estimation and Learning”. *Under review*. 2023.
[\[preprint\]](#) [\[code\]](#)
2. **Marios Papachristou**, Amin Rahimian. “Production Networks Resilience: Cascading Failures, Power Laws and Optimal Interventions”. *Under review. Preliminary poster presented at the ACM Conference of Economics and Computation (EC)*. 2023.
[\[preprint\]](#) [\[code\]](#) [\[slides\]](#)
3. **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](#).
[\[slides\]](#)
4. **Marios Papachristou**, Sid Banerjee, Jon Kleinberg. “Dynamic Interventions for Networked Contagions”. *ACM Web Conference (WWW)* 2023.
[\[preprint\]](#) [\[code\]](#) [\[poster\]](#) [\[paper\]](#) [\[slides\]](#)
5. **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.
[\[preprint\]](#) [\[poster\]](#) [\[workshop\]](#)
6. **Marios Papachristou**, Jon Kleinberg. “Core-periphery Models for Hypergraphs”. *ACM SIGKDD Intl. Conf. on Knowledge Discovery and Data Mining (KDD)* 2022.
[\[paper\]](#) [\[code\]](#) [\[data\]](#) [\[slides\]](#) [\[poster\]](#)
7. **Marios Papachristou**, Jon Kleinberg. “Allocating Stimulus Checks in Times of Crisis”. *ACM Web Conference (WWW)* 2022.
[\[preprint\]](#) [\[code\]](#) [\[paper\]](#) [\[talk\]](#) [\[slides\]](#) [\[news\]](#)
8. **Marios Papachristou**. “Sublinear Domination and Core-periphery Networks”. *Scientific Reports (Nature)*, 2021.
[\[paper\]](#) [\[code\]](#)
9. $\alpha\beta$ 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 (TOMS)*, 2023. This paper incorporates and supersedes our previous [preprint](#).
[\[paper\]](#) [\[code\]](#)

10. **Marios Papachristou**, Dimitris Fotakis. “Stochastic Opinion Dynamics for User Interest Prediction in Online Social Networks”. *Preprint*, 2020.
[\[preprint\]](#)
11. **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*)
12. 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

Applied Research Intern – Microsoft *May 2023 – ongoing*
 – Large Language Models (LLMs) for collective intelligence.
 – *Office of Applied Research, with Chin-Chia Hsu and Longqi Yang*

Engineering Intern – Twitter *May 2022 – August 2022*
 – Scalable Graph Machine Learning on graphs.
 – *User Modeling Research, with Rishab Goel, Frank Portman, and Matthew Miller*

Graduate Researcher – Cornell University *Sept. 2020 – ongoing*
 – Research in social and information networks, (allocation algorithms to mitigate contagion in financial and supply-chain networks, statistical graph and hyper-graph models)

Researcher – GeomScale Organization *May 2020 – March 2020*
 – Part-time research on sampling from truncated log-concave densities, and convex optimization, working on the [volesti](#) open-source package.
 – *Mentors: Apostolos Chalkis, Vissarion Fisikopoulos, Elias Tsigaridas*

Researcher – Athens University of Economics and Business *2018 – 2020*
 – Software architecture recovery via call graphs, source code embeddings, and clustering methods.
 – *Mentor: Diomidis Spinellis*

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

Researcher – P2P Lab *2013 – 2014*

HONORS & AWARDS

- Onassis Scholarship *2023*
- 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*

	<ul style="list-style-type: none"> – 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
TEACHING EXPERIENCE	<ul style="list-style-type: none"> – The Structure of Information Networks (PhD-level, Cornell) <i>Spring & Fall 2023</i> – Discrete Mathematics (NTUA) <i>Spring 2017</i> – Programming Techniques (NTUA) <i>Spring 2016</i> – Introduction to Computer Programming (NTUA) <i>Fall 2016, Fall 2017</i>
TALKS & PRESENTATIONS † = scheduled * = presented by co-author	<ul style="list-style-type: none"> • <i>Production Networks Resilience: Cascading Failures, Power Laws, and Optimal Interventions</i> <ul style="list-style-type: none"> – INFORMS Annual Meeting^{†*} <i>October 2023</i> – LinkedIn Campus Visit <i>May 2023</i> • <i>Resource Allocation in a Financial Contagion Environment</i> <ul style="list-style-type: none"> – CS6850 (Cornell; guest lecture) <i>April 2023</i> – Cornell Theory Seminar <i>November 2022</i> • <i>Dynamic Interventions for Networked Contagions</i> <ul style="list-style-type: none"> – <i>Invited Talk at</i> INFORMS Annual Meeting[†] <i>October 2023</i> – ACM Web Conference <i>April 2023</i> – ACM Conference on Equity and Access in Algorithms, Mechanisms, and Optimization <i>October 2022</i> • <i>Core-periphery Models for Hypergraphs</i> <ul style="list-style-type: none"> – ACM Conference on Knowledge Discovery and Data Mining <i>August 2022</i> • <i>GLINKX: A Scalable Unified Framework for Homophilous and Heterophilous Graphs</i> <ul style="list-style-type: none"> – NeurIPS Workshop on Graph Learning Frontiers <i>December 2022</i> – Twitter Machine Learning Seminar <i>August 2022</i> • <i>Allocating Stimulus Checks in Times of Crisis</i> <ul style="list-style-type: none"> – ACM Web Conference <i>April 2022</i> – ACM Conference on Equity and Access in Algorithms, Mechanisms, and Optimization <i>October 2021</i> • <i>Sampling from Truncated High Dimensional Logconcave Densities</i> <ul style="list-style-type: none"> – PyData Global <i>December 2020</i> • <i>Software Clusterings with Vector Semantics and the Call Graph</i> <ul style="list-style-type: none"> – ACM Joint Meeting on European Software Engineering Conference and Symposium on the Foundations of Software Engineering <i>August 2019</i>
SERVICE	<ul style="list-style-type: none"> • <i>Program Committee</i> <ul style="list-style-type: none"> – ACM Conference on Fairness Accountability and Transparency (FAccT) <i>2022</i> – ACM Conference on Knowledge Discovery and Data Mining (KDD) <i>2023</i> • <i>Reviewing</i> <ul style="list-style-type: none"> – European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD) <i>2023</i> – Machine Learning (Springer) – NeurIPS 2022 Workshop on Graph Learning Frontiers (GLFrontiers) <i>2022</i> – NeurIPS 2021 Workshop on Human and Machine Decisions <i>2021–</i> – Journal of Open Source Software <i>2021–</i>

- *Mentorship*
 - Student-applicant Support Program at Cornell CIS 2022
 - Google Summer of Code 2019–2022

LAST UPDATED August 23, 2023