

Marios Papachristou

CONTACT INFORMATION	E-mail GitHub Office Google Scholar Twitter Website	papachristoumarios@cs.cornell.edu papachristoumarios 302 Gates Hall, Cornell University, 107 Hoy Rd [profile] @papachristoum papachristoumarios.github.io
AREAS	Algorithms, Information Networks, Machine Learning, Data Mining	
EDUCATION	Cornell University 2020 – exp. 2026 Ph.D. in Computer Science (<i>GPA: 4.0</i>), Minor: <i>Applied Mathematics</i> – <i>Advisor</i> : Jon Kleinberg – <i>Relevant Coursework</i> : Analysis of Algorithms, Information Networks, Numerical Methods for Data Science, Design of Online Marketplaces, ML Theory M.S. in Computer Science (<i>GPA: 4.0</i>) 2020 – 2022 National Technical University of Athens 2015 – 2020 Diploma in ECE (<i>GPA: 9.49/10.00 – top 2%</i>). Major: <i>Computer Science</i> . – <i>Advisor</i> : Dimitris Fotakis	
REFEREED PUBLICATIONS Google Scholar Profile $\alpha\beta$ = alphabetical order * = equal contribution	<p>[P1] Marios Papachristou, Sid Banerjee, Jon Kleinberg. “Dynamic Interventions for Networked Contagions”. <i>ACM Web Conference (WWW) 2023</i>. [preprint] [code] [poster] [paper] [slides]</p> <p>[P2] Marios Papachristou, Jon Kleinberg. “Core-periphery Models for Hypergraphs”. <i>ACM SIGKDD Intl. Conf. on Knowledge Discovery and Data Mining (KDD) 2022</i>. [paper] [code] [data] [slides] [poster]</p> <p>[P3] Marios Papachristou, Jon Kleinberg. “Allocating Stimulus Checks in Times of Crisis”. <i>ACM Web Conference (WWW) 2022</i>. [preprint] [code] [paper] [talk] [slides] [news]</p> <p>[P4] Marios Papachristou. “Sublinear Domination and Core-periphery Networks”. <i>Scientific Reports (Nature)</i>, 2021. [paper] [code]</p> <p>[P5] $\alpha\beta$ Apostolos Chalkis, Vissarion Fisikopoulos, Marios Papachristou, Elias Tsigaridas. “Truncated Log-concave Sampling for Convex Bodies with Reflective Hamiltonian Monte Carlo”. <i>ACM Transactions on Mathematical Software (TOMS)</i>, 2023. This paper incorporates and supersedes our previous preprint. [paper] [code]</p> <p>[P6] Marios Papachristou. “Software clusterings with vector semantics and the call graph”. <i>ACM Joint Meeting on European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE) 2019</i>. [paper] [code] [data] (<i>ESEC/FSE Student Research Competition Finalist Paper</i>)</p> <p>[P7] Vasilis Kostakis*, and Marios Papachristou*. “Commons-based peer production and digital fabrication: The case of a RepRap-based, Lego-built 3D printing-milling machine”. <i>Telematics and Informatics</i>, 2014. [paper]</p>	
WORKING PAPERS	[W1] Marios Papachristou , Amin Rahimian. “Differentially Private Distributed Estimation and Learning”. <i>Under review</i> . 2023. [preprint] [code]	

- [W2] **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.
[\[preprint\]](#) [\[code\]](#) [\[slides\]](#)
- [W3] **Marios Papachristou**, Sid Banerjee, Jon Kleinberg, “Optimal Resource Allocation for Remediating Networked Contagions”. *Under review*. 2023.
This paper extends our previous work in WWW 2022 and WWW 2023.
[\[slides\]](#)
- [W4] **Marios Papachristou**, Rishab Goel, Frank Portman, Matt Miller, Rong Jin. “GLINKX: A Scalable Unified Framework for Homophilous and Heterophilous Graphs”. *Under Review*. 2023
Preliminary version presented at NeurIPS workshop on Graph Learning Frontiers (GLFrontiers), 2022.
[\[preprint\]](#) [\[poster\]](#) [\[workshop\]](#)
- [W5] **Marios Papachristou**, Dimitris Fotakis. “Stochastic Opinion Dynamics for User Interest Prediction in Online Social Networks”. *Preprint*, 2020.
[\[preprint\]](#)

RESEARCH EXPERIENCE

Applied Research Intern – Microsoft *May 2023 – August 2023*
 – 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*

	<ul style="list-style-type: none"> – Gerondelis Scholarship 2022 – A.G. Leventis Scholarship (12.5% acceptance rate) 2022 – Chateaubriand Fellowship (<i>declined</i>) 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 “<i>be finnovative 2.0 accelerator</i>” 2018 – 1st Award at “<i>Crowdhackathon Fintech #2</i>” 2017 – Top %1 worldwide in IEEEExtreme 11.0 Programming Competition 2017 – Touramanoglu Scholarship 2015 – “The Great Moment of Education” Scholarship 2015
TEACHING	<ul style="list-style-type: none"> – The Structure of Information Networks (PhD-level, Cornell) <i>Spring & Fall 2023</i>
EXPERIENCE	<ul style="list-style-type: none"> – 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	<ul style="list-style-type: none"> • <i>Production Networks Resilience: Cascading Failures, Power Laws, and Optimal Interventions</i> <ul style="list-style-type: none"> – Columbia University, Student Theory Seminar[†] <i>November 2023</i> – Cornell University, Theory Tea[†] <i>November 2023</i> – INFORMS Annual Meeting^{†*} <i>October 2023</i> – Cornell University, LinkedIn Campus Visit <i>May 2023</i> • <i>Resource Allocation in a Financial Contagion Environment</i> <ul style="list-style-type: none"> – University of Chicago, Theory Seminar[†] <i>October 2023</i> – Indiana University, Center for Complex Networks and Systems Research <i>September 2023</i> – Cornell University, CS 6850 Guest Lecture <i>April 2023</i> – Cornell University, 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>

[†]= scheduled
^{*}= presented by
co-author

- ACM Conference on Knowledge Discovery and Data Mining (KDD) 2023
- *Reviewing*
 - Innovations in Theoretical Computer Science (ITCS) 2024
 - 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
 - Google Summer of Code 2019–2022

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