

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, Minor: <i>Applied Mathematics</i> <ul style="list-style-type: none">– <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 2020 – 2022 National Technical University of Athens 2015 – 2020 Diploma in ECE (<i>top 2%</i>). Major: <i>Computer Science</i> . <ul style="list-style-type: none">– <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)</i> 2023. [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)</i> 2022. [paper] [code] [data] [slides] [poster]</p> <p>[P3] Marios Papachristou, Jon Kleinberg. “Allocating Stimulus Checks in Times of Crisis”. <i>ACM Web Conference (WWW)</i> 2022. [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)</i> 2019. [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 , Sid Banerjee, Jon Kleinberg. “Optimal Resource Allocation for Remediating Networked Contagions”. <i>R&R in Management Science</i> . 2023.	

*This paper extends our previous works in [WWW 2022](#) and [WWW 2023](#).
[\[slides\]](#)*

- [W2] **Marios Papachristou**, Longqi Yang, Chin-Chia Hsu, “Leveraging Large Language Models for Collective Decision-Making”. *Under review*. 2023.
[\[preprint\]](#)
- [W3] **Marios Papachristou**, Amin Rahimian. “Differentially Private Distributed Estimation and Learning”. *Under review*. 2023.
[\[preprint\]](#) [\[code\]](#)
- [W4] **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.
[\[preprint\]](#) [\[code\]](#) [\[slides\]](#)
- [W5] **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.
[\[preprint\]](#) [\[poster\]](#) [\[workshop\]](#)
- [W6] **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.*
[\[code\]](#) [\[data\]](#) [\[talk\]](#)

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
- 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

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

TALKS &
PRESENTATIONS
†= scheduled
*= presented by
co-author

- ***Leveraging Large Language Models for Collective Decision-Making***
 - Microsoft Research, Invited Applied Research Talks *August 2023*
- ***Production Networks Resilience: Cascading Failures, Power Laws, and Optimal Interventions***
 - Columbia University, Student Theory Seminar *November 2023*
 - Cornell University, Theory Tea *November 2023*
 - INFORMS Annual Meeting* *October 2023*
 - Cornell University, LinkedIn Campus Visit *May 2023*
- ***Resource Allocation in a Financial Contagion Environment***
 - University of Chicago, Theory Seminar *October 2023*
 - Indiana University, Center for Complex Networks and Systems Research *September 2023*
 - Cornell University, CS 6850 Guest Lecture *April 2023*
 - Cornell University, Theory Seminar *November 2022*
- ***Dynamic Interventions for Networked Contagions***
 - *Invited Talk at* INFORMS Annual Meeting *October 2023*
 - 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*
 - ACM Web Conference (WWW) *2024*
 - Innovations in Theoretical Computer Science (ITCS) *2024*
 - ACM Conference on Human Factors in Computing (CHI) *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*

LAST UPDATED

December 1, 2023