

Marios Papachristou

CONTACT INFORMATION	E-mail	papachristoumarios@cs.cornell.edu
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	Office	302 Gates Hall, Cornell University, 107 Hoy Rd
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	Website	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>	
	– <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 Electrical and Computer Engineering (<i>top 2%</i>). Major: <i>Computer Science</i> .	
	– <i>Advisor</i> : Dimitris Fotakis	
REFEREED PUBLICATIONS Google Scholar Profile $\alpha\beta$ = alphabetical order * = equal contribution	[P1]	Marios Papachristou , Sid Banerjee, Jon Kleinberg. “Dynamic Interventions for Networked Contagions”. <i>ACM Web Conference (WWW) 2023</i> . [preprint] [code] [poster] [paper] [slides]
	[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]
	[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]
	[P4]	Marios Papachristou . “Sublinear Domination and Core-periphery Networks”. <i>Scientific Reports (Nature)</i> , 2021. [paper] [code]
	[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]
	[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>
WORKING PAPERS	[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]
	[W1]	Marios Papachristou , Yuan Yuan. “Network Formation and Dynamics among Multi-LLMs”. <i>Under review</i> . 2024. [preprint] [slides]

- [W2] **Marios Papachristou**, Sid Banerjee, Jon Kleinberg. “Optimal Resource Allocation for Remediating Networked Contagions”. *R&R in Management Science*. 2023.
This paper extends our previous works in WWW 2022 and WWW 2023.
[\[slides\]](#)
- [W3] **Marios Papachristou**, Longqi Yang, Chin-Chia Hsu, “Leveraging Large Language Models for Collective Decision-Making”. *Under review*. 2023.
[\[preprint\]](#)
- [W4] **Marios Papachristou**, Amin Rahimian. “Group Decision-Making among Privacy-aware Agents”. *Under review*. 2023.
Preliminary version accepted at the AAAI Workshop on Privacy-Preserving Artificial Intelligence. 2023.
[\[preprint\]](#) [\[poster\]](#)
- [W5] **Marios Papachristou**, Amin Rahimian. “Differentially Private Distributed Estimation and Learning”. *Under review*. 2023.
[\[preprint\]](#) [\[code\]](#) [\[poster\]](#)
- [W6] **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.
[\[preprint\]](#) [\[code\]](#) [\[slides\]](#)
- [W7] **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.
[\[preprint\]](#) [\[poster\]](#) [\[workshop\]](#)
- [W8] **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 hypergraph 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*
- 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

- ***Information aggregation and distributed learning in privacy-critical environments***
 - Rutgers University, Seminar^{*} *November 2023*
- ***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*

	<ul style="list-style-type: none"> • <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>
REVIEWING	<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"> – ACM Web Conference (WWW) <i>2024</i> – Innovations in Theoretical Computer Science (ITCS) <i>2024</i> – ACM Conference on Human Factors in Computing (CHI) <i>2024</i> – 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 & VOLUNTEERING	<ul style="list-style-type: none"> • Student-applicant Support Program at Cornell CIS <i>2022</i> • Google Summer of Code Mentor <i>2019–2022</i> • Volunteer lessons for the National Olympiad of Informatics (PDP) and other programming competitions <i>2019</i>
LAST UPDATED	February 28, 2024