

## Marios Papachristou

CONTACT INFORMATION	E-mail GitHub Office Google Scholar Twitter Website	<a href="mailto:papachristoumarios@cs.cornell.edu">papachristoumarios@cs.cornell.edu</a> <a href="#">papachristoumarios</a> 302 Gates Hall, Cornell University, 107 Hoy Rd <a href="#">[profile]</a> <a href="#">@papachristoum</a> <a href="https://github.com/papachristoumarios">papachristoumarios.github.io</a>
AREAS	Algorithms, Information Networks, Machine Learning, Data Mining	
EDUCATION	<b>Cornell University</b> <span style="float: right;">2020 – exp. 2026</span> Ph.D. in Computer Science, Minor: <i>Applied Mathematics</i> <ul style="list-style-type: none"><li>– <i>Advisor</i>: Jon Kleinberg</li><li>– <i>Relevant Coursework</i>: Analysis of Algorithms, Information Networks, Numerical Methods for Data Science, Design of Online Marketplaces, ML Theory</li></ul> M.S. in Computer Science <span style="float: right;">2020 – 2022</span>  <b>National Technical University of Athens</b> <span style="float: right;">2015 – 2020</span> Diploma in ECE ( <i>top 2%</i> ). Major: <i>Computer Science</i> . <ul style="list-style-type: none"><li>– <i>Advisor</i>: Dimitris Fotakis</li></ul>	
REFEREED PUBLICATIONS <a href="#">Google Scholar Profile</a> $\alpha\beta$ = alphabetical order * = equal contribution	<p>[P1] <b>Marios Papachristou</b>, Sid Banerjee, Jon Kleinberg. “Dynamic Interventions for Networked Contagions”. <i>ACM Web Conference (WWW)</i> 2023. <a href="#">[preprint]</a> <a href="#">[code]</a> <a href="#">[poster]</a> <a href="#">[paper]</a> <a href="#">[slides]</a></p> <p>[P2] <b>Marios Papachristou</b>, Jon Kleinberg. “Core-periphery Models for Hypergraphs”. <i>ACM SIGKDD Intl. Conf. on Knowledge Discovery and Data Mining (KDD)</i> 2022. <a href="#">[paper]</a> <a href="#">[code]</a> <a href="#">[data]</a> <a href="#">[slides]</a> <a href="#">[poster]</a></p> <p>[P3] <b>Marios Papachristou</b>, Jon Kleinberg. “Allocating Stimulus Checks in Times of Crisis”. <i>ACM Web Conference (WWW)</i> 2022. <a href="#">[preprint]</a> <a href="#">[code]</a> <a href="#">[paper]</a> <a href="#">[talk]</a> <a href="#">[slides]</a> <a href="#">[news]</a></p> <p>[P4] <b>Marios Papachristou</b>. “Sublinear Domination and Core-periphery Networks”. <i>Scientific Reports (Nature)</i>, 2021. <a href="#">[paper]</a> <a href="#">[code]</a></p> <p>[P5] <math>\alpha\beta</math> Apostolos Chalkis, Vissarion Fisikopoulos, <b>Marios Papachristou</b>, 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 <a href="#">preprint</a>. <a href="#">[paper]</a> <a href="#">[code]</a></p> <p>[P6] <b>Marios Papachristou</b>. “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. <a href="#">[paper]</a> <a href="#">[code]</a> <a href="#">[data]</a> (<i>ESEC/FSE Student Research Competition Finalist Paper</i>)</p> <p>[P7] Vasilis Kostakis*, and <b>Marios Papachristou*</b>. “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. <a href="#">[paper]</a></p>	
WORKING PAPERS	[W1] <b>Marios Papachristou</b> , Sid Banerjee, Jon Kleinberg. “Optimal Resource Allocation for Remediating Networked Contagions”. <i>R&amp;R in Management Science</i> . 2023.	

- [W2] **Marios Papachristou**, Longqi Yang, Chin-Chia Hsu, “Leveraging Large Language Models for Collective Decision-Making”. *Under review*. 2023
- [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.  
[\[preprint\]](#) [\[code\]](#) [\[slides\]](#)  
*This paper extends our previous work in WWW 2022 and WWW 2023.*  
[\[slides\]](#)
- [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.*  
[\[code\]](#) [\[data\]](#) [\[talk\]](#)

**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 ( <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 EXPERIENCE	– The Structure of Information Networks (PhD-level, Cornell)	<i>Spring &amp; 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	• <b><i>Leveraging Large Language Models for Collective Decision-Making</i></b>	
	– Microsoft Research, Invited Applied Research Talks	<i>August 2023</i>
	• <b><i>Production Networks Resilience: Cascading Failures, Power Laws, and Optimal Interventions</i></b>	
	– 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>
	• <b><i>Resource Allocation in a Financial Contagion Environment</i></b>	
	– 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>
	• <b><i>Dynamic Interventions for Networked Contagions</i></b>	
	– Invited Talk at 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>
	• <b><i>Core-periphery Models for Hypergraphs</i></b>	
	– ACM Conference on Knowledge Discovery and Data Mining	<i>August 2022</i>
	• <b><i>GLINKX: A Scalable Unified Framework for Homophilous and Heterophilous Graphs</i></b>	
	– NeurIPS Workshop on Graph Learning Frontiers	<i>December 2022</i>
	– Twitter, Machine Learning Seminar	<i>August 2022</i>
	• <b><i>Allocating Stimulus Checks in Times of Crisis</i></b>	
	– ACM Web Conference	<i>April 2022</i>
	– ACM Conference on Equity and Access in Algorithms, Mechanisms, and Optimization	<i>October 2021</i>
	• <b><i>Sampling from Truncated High Dimensional Logconcave Densities</i></b>	
	– PyData Global	<i>December 2020</i>
	• <b><i>Software Clusterings with Vector Semantics and the Call Graph</i></b>	
	– ACM Joint Meeting on European Software Engineering Conference and Symposium on the Foundations of Software Engineering	<i>August 2019</i>

SERVICE

- *Program Committee*
  - ACM Conference on Fairness Accountability and Transparency (FAccT) 2022
  - ACM Conference on Knowledge Discovery and Data Mining (KDD) 2023
- *Reviewing*
  - 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

October 24, 2023