

## Marios Papachristou

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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 Electrical and Computer Engineering ( <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	<p><a href="#">Google Scholar Profile</a> <math>\alpha\beta</math> = alphabetical order * = equal contribution</p> <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.	

*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. “Group Decision-Making among Privacy-aware Agents”. *Under review*. 2023.
- [W4] **Marios Papachristou**, Amin Rahimian. “Differentially Private Distributed Estimation and Learning”. *Under review*. 2023.  
[\[preprint\]](#) [\[code\]](#)
- [W5] **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.  
[\[preprint\]](#) [\[code\]](#) [\[slides\]](#)
- [W6] **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.  
[\[preprint\]](#) [\[poster\]](#) [\[workshop\]](#)
- [W7] **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 (*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

<sup>†</sup>= 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*
- ***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 6, 2023