

## Marios Papachristou

|                                |   |   |
|--------------------------------|---|---|
| PERSONAL<br>INFORMATION        | E-mail  | mp2242@cornell.edu  |
|                                | Phone   | (607)-262-5495  |
|                                | Website   | <a href="https://papachristoumarios.github.io">papachristoumarios.github.io</a> |
|                                | Nationality   | Greek, US Permanent Resident (Green Card Holder)                                |
| RESEARCH<br>INTERESTS          | Algorithms, Network Economics, Supply Chains, Systemic Risk, LLMs, Differential Privacy, Machine Learning, Data Mining, Computational Social Science      |   |
| EDUCATION                      | <b>Cornell University</b>   | 2020 – Expected 2025  |
|                                | Ph.D. in Computer Science, Minor: <i>Applied Mathematics</i><br>– <i>Advisor</i> : Jon Kleinberg  |   |
|                                | M.S. in Computer Science  | 2020 – 2022   |
|                                | <b>National Technical University of Athens</b>  | 2015 – 2020   |
| INDUSTRY<br>EXPERIENCE         | Diploma in Electrical and Computer Engineering<br>Major: <i>Computer Science</i> .<br>– <i>Advisor</i> : Dimitris Fotakis<br>– Top 2% of graduating class |   |
|                                | <b>Microsoft Research</b>   | Summer 2023   |
|                                | Office of Applied Research, <i>with Chin-Chia Hsu and Longqi Yang</i>   |   |
|                                | <b>Twitter</b>  | Summer 2022   |
| SELECTED<br>HONORS &<br>AWARDS | User Modeling Research Group, <i>with Rishab Goel, Frank Portman, Matt Miller</i>   |   |
|                                | – <b>LinkedIn Ph.D. Fellowship</b>  | 2022  |
|                                | One-year fully funded fellowship by LinkedIn. Acceptance rate 14%.  |   |
|                                | – <b>Onassis Scholarship</b>  | 2023  |
|                                | Three-year fellowship for Greek Ph.D. students. Acceptance rate: 16%.   |   |
|                                | – <b>A.G. Leventis Scholarship</b>  | 2022  |
|                                | Award for graduate students of Greek origin. Acceptance rate 12.5%.   |   |
|                                | – <b>Chateaubriand Fellowship</b>   | 2022  |
|                                | Fellowship granted by the French Embassy in the US for studies in France (declined for personal reasons). Acceptance rate 33%.                            |   |
|                                | – <b>Cornell Fellowship</b>   | 2020  |
|                                | One-year fully funded fellowship by the CS department based on “exceptional preparation and promise”.   |   |
|                                | – <b>IEEEExtreme 11.0 Programming Competition</b>   | 2017  |
|                                | Top 1% worldwide in IEEE’s algorithms competition.  |   |

### PAPERS

[Google Scholar Profile](#)

$\alpha\beta$  = alphabetical order

\* = equal contribution

### Selected Papers

- [S1] **Optimal Resource Allocation for Remediating Networked Contagions**  
*Marios Papachristou, Sid Banerjee, Jon Kleinberg*  
*Major Revision (submitted R&R), Management Science, 2024*  
[\[preprint\]](#)
- [S2] **Group Decision-Making among Privacy-aware Agents**  
*Marios Papachristou, Amin Rahimian*  
*R&R at Operations Research, 2024*

*Preliminary version presented at the Theory and Practice of Differential Privacy Workshop (TPDP)*

[\[preprint\]](#) [\[talk\]](#)

[S3] **Network Formation and Dynamics among Multi-LLMs**

*Marios Papachristou*, Yuan Yuan

*Working Paper*, 2024

[\[preprint\]](#) [\[slides\]](#)

[S4] **Structural Measures of Resilience for Supply Chains**

*Marios Papachristou*, Amin Rahimian

*Under review at Management Science*, 2024

[\[preprint\]](#) [\[code\]](#) [\[slides\]](#)

[S5] **Allocating Stimulus Checks in Times of Crisis**

*Marios Papachristou*, Jon Kleinberg

*ACM Web Conference (WWW)*, 2022

[\[paper\]](#) [\[code\]](#) [\[talk\]](#) [\[slides\]](#) [\[news\]](#)

## Journal Papers

[J1] **Differentially Private Distributed Estimation and Learning**

*Marios Papachristou*, Amin Rahimian

*IJSE Transactions*, 2024

[\[paper\]](#) [\[code\]](#) [\[talk\]](#)

[J2] **Sublinear Domination and Core-periphery Networks**

*Marios Papachristou*

*Scientific Reports (Nature Portfolio)*, 2021

[\[paper\]](#) [\[code\]](#)

[J3] **Truncated Log-concave Sampling for Convex Bodies with Reflective Hamiltonian Monte Carlo**

$\alpha\beta$  Apostolos Chalkis, Vissarion Fisikopoulos, *Marios Papachristou*, Elias Tsigaridas

*ACM Transactions on Mathematical Software (TOMS)*, 2023

[\[paper\]](#) [\[code\]](#)

[J4] **Commons-based peer production and digital fabrication: The case of a RepRap-based, Lego-built 3D printing-milling machine**

Vasilis Kostakis\*, and *Marios Papachristou\**

*Telematics and Informatics*, 2014

[\[paper\]](#)

## Refereed CS Conference Proceedings

[C1] **Dynamic Interventions for Networked Contagions**

*Marios Papachristou*, Sid Banerjee, Jon Kleinberg

*ACM Web Conference (WWW), Economics and Markets Track*, 2023

[\[paper\]](#) [\[code\]](#) [\[poster\]](#) [\[slides\]](#)

[C2] **Core-periphery Models for Hypergraphs**

*Marios Papachristou*, Jon Kleinberg

*ACM Intl. Conf. on Knowledge Discovery and Data Mining (KDD)*, 2022

[\[paper\]](#) [\[code\]](#) [\[data\]](#) [\[slides\]](#) [\[poster\]](#)

[C3] **Allocating Stimulus Checks in Times of Crisis**

*Marios Papachristou*, Jon Kleinberg

*ACM Web Conference (WWW), Economics and Markets Track*, 2022

[\[paper\]](#) [\[code\]](#) [\[talk\]](#) [\[slides\]](#) [\[news\]](#)

- [C4] **Software Clusterings with Vector Semantics and the Call Graph**  
*Marios Papachristou*  
*ACM Joint Meeting on European Software Engineering Conference and Symposium on the Foundations of Software Engineering (ESEC/FSE), 2019*  
[\[paper\]](#) [\[code\]](#) [\[data\]](#)  
(ESEC/FSE Student Research Competition Finalist Paper)

### Preprints & Working Papers

- [WP1] **Optimal Resource Allocation for Remediating Networked Contagions**  
*Marios Papachristou, Sid Banerjee, Jon Kleinberg*  
*Major Revision (submitted R&R), Management Science, 2024*  
[\[preprint\]](#) [\[slides\]](#)
- [WP2] **Group Decision-Making among Privacy-aware Agents**  
*Marios Papachristou, Amin Rahimian*  
*R&R at Operations Research, 2024*  
*Preliminary version presented at the Theory and Practice of Differential Privacy Workshop (TPDP)*  
[\[preprint\]](#) [\[talk\]](#)
- [WP3] **Network Formation and Dynamics among Multi-LLMs**  
*Marios Papachristou, Yuan Yuan*  
*Working paper, 2024*  
*Preliminary version presented at the International Conference on Computational Social Science (IC2S2)*  
[\[preprint\]](#) [\[slides\]](#)
- [WP4] **Leveraging Large Language Models for Collective Decision-Making**  
*Marios Papachristou, Longqi Yang, Chin-Chia Hsu*  
*Major revision at CSCW, 2024*  
*Preliminary version presented at the LLMs as Research Tools at CHI 2024*  
[\[preprint\]](#) [\[slides\]](#)
- [WP5] **Structural Measures of Resilience for Supply Chains**  
*Marios Papachristou, Amin Rahimian*  
*Under review at Management Science, 2024*  
[\[preprint\]](#) [\[code\]](#) [\[slides\]](#)
- [WP6] **The Power of Choice in Random Sampling**  
*Marios Papachristou, Jon Kleinberg*  
*Under review, 2024*  
Preprint available upon request
- [WP7] **Echoes of Disagreement: Measuring Disparity in Social Consensus**  
*Marios Papachristou, Jon Kleinberg*  
*Under review, 2024*  
Preprint available upon request

### Refereed CS Workshops

- [W1] **GLINKX: A Scalable Unified Framework for Homophilous and Heterophilous Graphs**  
*Marios Papachristou, Rishab Goel, Frank Portman, Matt Miller, Rong Jin*  
*NeurIPS workshop on Graph Learning Frontiers (GLFrontiers), 2022*  
*Provisional patent application submitted*  
[\[paper\]](#) [\[poster\]](#)

OTHER  
EXPERIENCE

**GeomScale Open-source Organization** *May 2020 – March 2020*  
Sampling from truncated log-concave densities, and convex optimization, working on the [volesti](#) open-source package *with Dr. Apostolos Chalkis, Dr. Vissarion Fisikopoulos, and Dr. Elias Tsigaridas*

**Athens University of Economics and Business** *2018 – 2020*  
Department of Management Science and Technology, *with Prof. Diomidis Spinellis*

**Google Summer of Code 2020 (GeomScale)** *June 2020 – August 2020*  
Sampling from high-dimensional truncated log-concave densities, *with Dr. Apostolos Chalkis, Dr. Vissarion Fisikopoulos, and Dr. Elias Tsigaridas*  
[\[code\]](#) [\[talk\]](#)

**Google Summer of Code 2018 (GFOSS-OTA)** *April 2018–September 2018*  
Automated codification of Greek Legislation, *with Prof. Diomidis Spinellis*  
[\[code\]](#) [\[data\]](#) [\[talk\]](#)

**Researcher – P2P Lab** *2013 – 2014*

TEACHING &  
MENTORSHIP  
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*
- Student-applicant Support Program at Cornell CIS *2022*
- Google Summer of Code Mentor *2019–2022*
- Volunteer lessons for the National Olympiad of Informatics (PDP) *2019*

INVITED TALKS &  
LECTURES

<sup>†</sup> = scheduled

\* = presented by co-author

- ***From Spread to Stability: Insights into Network Dynamics and Resilience*** *June 2024*
  - MIT, Research Group Meeting
- ***Network Formation and Dynamics among Multi-LLMs***
  - INFORMS Annual Meeting<sup>†</sup> *October 2024*
  - IBM Research, Exploratory Math Sciences Council Seminar *April 2024*
  - UIUC, Guest Lecture at the Network Analysis Course *April 2024*
  - Cornell University, AIPP Group *March 2024*
  - Learning on Graphs (LoG) NYC Meetup *February 2024*
- ***Information Aggregation and Distributed Learning in Privacy-critical Environments***
  - TOC4Fairness Online Seminar Series\* *March 2024*
  - Information: Theory and Applications (ITA) Workshop\* *February 2024*
  - Rutgers University Business School, Seminar\* *November 2023*
- ***Leveraging Large Language Models for Collective Decision-Making***
  - LLMs as Research Tools: Applications and Evaluations in HCI Data Work Workshop, ACM Conference on Human-Computer Interaction\* *May 2024*
  - Microsoft Research, Invited Applied Research Talks *August 2023*
- ***Structural Measures of Resilience for Supply Chains***
  - NSF Conference on Network Science and Economics *April 2024*
  - 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**
  - 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

#### PROFESSIONAL SERVICE

##### Program Committee

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

##### Reviewer

- International Conference on Computational Social Science (IC2S2) 2024
- 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

#### REFEREES

**Jon Kleinberg** (kleinberg@cornell.edu)  
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**Siddhartha Banerjee** (sbanerjee@cornell.edu)  
School of Operations Research and Information Engineering, Cornell University

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Department of Industrial Engineering, University of Pittsburgh

**Yuan Yuan** (yuyuan@ucdavis.edu)  
Graduate School of Management, UC Davis

**Longqi Yang, Chin-Chia Hsu** (longqi.yang@microsoft.com)  
Office of Applied Research, Microsoft Research

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Dept. of Informatics, Computing, and Engineering, Indiana University

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