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MARIOS A. PAPACHRISTOU (Last Updated: October 10, 2021)

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CONTACT INFORMATION	E-mail GitHub Office Google Scholar	<a href="mailto:papachristoumarios@cs.cornell.edu">papachristoumarios@cs.cornell.edu</a> <a href="#">papachristoumarios</a> 302 Gates Hall, Cornell University <a href="#">[profile]</a>
INTERESTS	Data Science (information networks, statistical methods, fairness in networks)	
EDUCATION	<b>Cornell University</b> Ph.D. in Computer Science. Concentration on Data Science, (GPA: 4.0) <ul style="list-style-type: none"><li>– <i>Advisor</i>: Prof. Jon Kleinberg</li><li>– <i>Coursework</i>: Analysis of Algorithms, Optimal Stopping, Information Networks, Numerical Methods for Data Science</li></ul>	2020 – exp. 2026
	<b>National Technical University of Athens</b> Diploma (5-year joint degree, 300 ECTS) Electrical & Computer Engineering (ECE) <ul style="list-style-type: none"><li>– GPA: 3.8/4.0 (top 1%)</li><li>– <i>Major</i>: Computer Science (<i>Major GPA</i>: 3.8/4.0)</li><li>– <i>Thesis</i>: “Stochastic Opinion Dynamics for Interest Prediction in Online Social Networks”. <i>Advisor</i>: Dimitris Fotakis. <i>Grade</i>: 4.0/4.0</li></ul>	2015–2020
PUBLICATIONS	<ol style="list-style-type: none"><li>1. <b>Papachristou, Marios</b>, and Kleinberg, Jon. “Allocating Stimulus Checks in Times of Crisis”. 2021, <i>EAAMO ’21 (Poster)</i>. <a href="#">[preprint]</a> <a href="#">[code]</a></li><li>2. <b>Papachristou, Marios</b> “Sublinear Domination and Core-periphery Networks”. 2021, <i>Scientific Reports (Nature)</i>. <a href="#">[preprint]</a> <a href="#">[code]</a> <a href="#">[paper]</a></li><li>3. <sup>b</sup>Chalkis, Apostolos, Fisikopoulos Vissarion, <b>Papachristou, Marios</b>, and Tsigaridas, Elias. “Truncated Log-concave Sampling with Reflective Hamiltonian Monte Carlo”. 2021 <a href="#">[preprint]</a> <a href="#">[code]</a></li><li>4. <b>Papachristou, Marios</b>, and Fotakis, Dimitris. “Stochastic Opinion Dynamics for User Interest Prediction in Online Social Networks”. 2020, <i>Submitted</i>. <a href="#">[preprint]</a></li><li>5. <b>Papachristou, Marios</b>. “Software clusterings with vector semantics and the call graph”. ESEC/FSE 2019. <a href="#">[paper]</a> <a href="#">[code]</a> <a href="#">[data]</a></li><li>6. Kostakis, Vasilis, and <b>Papachristou, Marios</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>, <a href="#">[paper]</a></li></ol>	
	<sup>b</sup> = alphabetical order.	
RESEARCH EXPERIENCE	<b>Cornell Universtiy (Graduate Research Assistant)</b> <ul style="list-style-type: none"><li>– Thesis-related research</li></ul>	May 2021 –
	<b>Business Analytics Lab (Undergraduate Researcher)</b> <ul style="list-style-type: none"><li>– Conduct research on Machine Learning on Software Engineering: Source Code Embeddings, Software Clusterings, Layering Violations</li><li>– Research funded by the CROSSMINER project, supported by <i>Horizon 2020</i> grant</li><li>– Research Advisor: Prof. Diomidis Spinellis</li></ul>	2018 – 2020
	<b>Hellenic Center for Marine Research</b>	June 2014 – August 2014
	<b>P2P Lab (Remote Research Associate)</b>	2013–2014
PROFESSIONAL EXPERIENCE	<b>Google Summer of Code 2020 (GeomScale)</b> <ul style="list-style-type: none"><li>– <i>Project</i>: Sampling from high-dimensional log-concave densities</li></ul>	June 2020–

- Develop software for the efficient sampling from high-dimensional log-concave densities using first-order oracles in (un)-truncated settings [\[code\]](#)
- Presented at [PyData Global 2020](#) and the [Workshop on Geometry and ML](#) at SoCG 2021.
- The software includes ODE and SDE solver and samplers for convex body domains (convex polytopes).

## Google Summer of Code 2018 (GFOSS-OTA)

*April 2018–September 2018*

- Developed a fully functional project for text mining, cross-linking and automated codification of Greek Legislation using Natural Language Processing & Data Mining Methods and Practices. [\[code\]](#) [\[data\]](#) [\[talk\]](#)
  - Cross-linking into Dynamic Graphs, Automated Codification
  - Topic Modeling, Embeddings, Ranking (PageRank)
  - Greek Legislative Texts Internet Archive Collection

## Ratle (Co-founder)

*October 2017–October 2018*

- Cashierless shopping system.
- Bluetooth Signal Denoising with Kalman Filters, Product tracking inside stores, Enterprise application for Business Analytics
- Tested at real stores

## TEACHING ASSISTANTSHIP EXPERIENCE

### Undergraduate Teaching Assistant

- Discrete Mathematics (4th Semester) *Spring 2017*
- Programming Techniques (2nd Semester) *Spring 2016*
- Introduction to Computer Programming (1st Semester) *Fall 2016, Fall 2017*

## TECHNICAL SKILLS

### Programming Languages

Python, C, C++, R, SQL

### Machine Learning Frameworks

PyTorch, Sklearn

### Data Analysis and Visualization

matplotlib, MATLAB, pandas, Bash

### Scientific Programming

NumPy, SciPy, NetworkX, MATLAB

### Databases

MySQL, MongoDB

## HONORS & AWARDS

- Cornell New Student Fellowship (first-year). Cornell University.
- Programming Competition *IEEEExtreme 12.0*. Ranked 48th out of 4,000 World-wide (top 1%), 1st in Greece, 13th in Europe (PComplete Team)
- 4th (out of 93) Place in *International Space Engineering Competition at Texas* (CanSat) organized by NASA Goddard and the American Astronautical Society
- 1st Award at “*Crowdhackathon Fintech #2*” for developing a cashierless system for retail shops to eliminate queues by National Bank of Greece
- 2nd Award at the “*be finnovative 2.0 accelerator*” for developing a cashierless system for retail shops to eliminate queues by National Bank of Greece
- ESEC/FSE 2019 ACM Student Research Competition Finalist
- 2nd Place at the “*ECESCON9*” Hackathon
- “*Touramanoglu*” Scholarship by Municipality of Helioupolis & Hymettus
- “*The Great Moment of Education*” Scholarship by Eurobank EFG

## VOLUNTEERING

- Teaching algorithms courses in National Competition for Informatics Camp
- Google Summer of Code Mentor (2019, w/ GFOSS-OTA, 2021 w/GeomScale)
- Member of TEDx NTUA 2018 Organizing Committee, IT Team
- Contributor to open-source projects to the [GeomScale](#) organization.
- *Reviewer*. [Journal of Open Source Software](#), [WHMD@NeurIPS 2021](#)

## REFERENCES

[Jon Kleinberg](#) (PhD Advisor), [Dimitris Fotakis](#) (U/G Advisor), [Diomidis Spinellis](#) (Research Advisor), [Vasilis Kostakis](#) (Harvard BKC)