Marios A. Papachristou (Last Updated: February 11, 2022)

Contact Information

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Interests

Data Science, Machine Learning, Statistics, Fairness, Data Mining, Algorithms with a focus on Social and Information Networks

Education

Cornell University *2020 – exp. 2026*

Ph.D. in Computer Science (*GPA: 4.0/4.0*), Minor: *Applied Math*

- *Advisor:* Jon Kleinberg, *Committee:* Jon Kleinberg, Emma Pierson, Sid Banerjee
- *Relevant Coursework:* Analysis of Algorithms, Information Networks, Numerical Methods for Data Science, Design of Online Marketplaces

National Technical University of Athens *2015–2020*

Diploma (5-year joint degree, 300 ECTS) Electrical & Computer Engineering (ECE)

- *GPA:* 3.8/4.0 (top 1%). *Major:* Computer Science. *Advisor:* Dimitris Fotakis.
- *Thesis: "Stochastic Opinion Dynamics for Interest Prediction in Online Social Networks".*

Publications

1. $^{\alpha\beta}$Banerjee, Sid, Kleinberg, Jon, and **Papachristou, Marios**. "Dynamically Allocating Resources on a Contagion Environment". 2022. *Work in Progress.*
2. **Papachristou, Marios**, and Kleinberg, Jon. "Core-periphery Models for Hypergraphs". 2022. *Under review.*
3. **Papachristou, Marios**, and Kleinberg, Jon. "Allocating Stimulus Checks in Times of Crisis". 2021, *WWW '22* [preprint] [code]
4. **Papachristou, Marios** "Sublinear Domination and Core–periphery Networks". 2021, *Scientific Reports (Nature).* [preprint] [code] [paper]
5. $^{\alpha\beta}$Chalkis, Apostolos, Fisikopoulos Vissarion, **Papachristou, Marios**, and Tsigaridas, Elias. "Truncated Log-concave Sampling with Reflective Hamiltonian Monte Carlo". 2021 [preprint] [code]
6. **Papachristou, Marios**, and Fotakis, Dimitris. "Stochastic Opinion Dynamics for User Interest Prediction in Online Social Networks". 2020, *Submitted.* [preprint]
7. **Papachristou, Marios**. "Software clusterings with vector semantics and the call graph". ESEC/FSE 2019. [paper] [code] [data]
8. Kostakis, Vasilis, and **Papachristou, Marios**. "Commons-based peer production and digital fabrication: The case of a RepRap-based, Lego-built 3D printing-milling machine". Telematics and Informatics, [paper]

$^{\alpha\beta}$= alphabetical order, * = equal contribution

Research Experience

Twitter Cortex (Research Internship) *May 2022 – August 2022*

- Applied ML research on the User Modeling team.

Cornell University (Graduate Research Assistant) *May 2021 –*

- Thesis-related research

GeomScale Organization *May 2019 –*

- Part-time research on sampling from truncated log-concave densities, and convex optimization, working on the volesti open-source package.

Business Analytics Lab (Undergraduate Researcher) *2018 – 2020*

- Conduct research on the intersection of Machine Learning, Network Science, and Software Engineering
- Research funded by the CROSSMINER project, supported by *Horizon 2020* grant
- *Advisor:* Prof. Diomidis Spinellis

Hellenic Center for Marine Research *June 2014 – August 2014*

P2P Lab (Remote Research Associate) *2013–2014*

PROFESSIONAL EXPERIENCE

Google Summer of Code 2020 (GeomScale) *June 2020– August 2020*

- *Project: Sampling from high-dimensional truncated log-concave densities*
- Develop software for the efficient sampling from high-dimensional log-concave densities using first-order oracles in truncated settings with ODE and SDE solvers [code] [talk1] [talk2]

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 Languaging 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 start-up

TEACHING ASSISTANTSHIP EXPERIENCE

Undergraduate Teaching Assistant (NTUA)

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

HONORS & AWARDS

- Cornell New Student Fellowship (first-year). Cornell University.
- Thomaidion Award. Publication during undergraduate studies (2019). NTUA.
- Programming Competition *IEEEXtreme 12.0*. Ranked 48th out of 4,000 Worldwide (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 Americal 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.* JOSS, WHMD@NeurIPS '21, FAccT '22, OR Spectrum