Marios A. Papachristou

Contact Information

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Google Scholar [profile]

Interests

Data Science (information networks, statistical methods, fairness in networks)

Education

Cornell University *2020 – exp. 2026*
Ph.D. in Computer Science. Concentration on Data Science
- *Advisor:* Prof. Jon Kleinberg
- *GPA:* 4.0
- *Coursework:* Analysis of Algorithms, Optimal Stopping, Information Networks, Numerical Methods for Data Science

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

Publications

1. **Papachristou, Marios**, and Kleinberg, Jon. "Allocating Stimulus Checks in Times of Crisis". 2021, *Submitted.* [preprint] [code]
2. **Papachristou, Marios** "Sublinear Domination and Core–periphery networks". 2021, *Submitted.* [preprint] [code]
3. [♭]Chalkis, Apostolos, Fisikopoulos Vissarion, **Papachristou, Marios**, and Tsigaridas, Elias. "Truncated Log-concave Sampling with Reflective Hamiltonian Monte Carlo". 2021 [preprint] [code]
4. **Papachristou, Marios**, and Fotakis, Dimitris. "Stochastic Opinion Dynamics for User Interest Prediction in Online Social Networks". 2020, *Submitted.*
5. **Papachristou, Marios**. "Software clusterings with vector semantics and the call graph". ESEC/FSE 2019.. [paper] [code] [data]
6. 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]

[♭]= alphabetical order.

Research Experience

Cornell Universtiy (Graduate Research Assistant) *May 2021 –*
- Thesis-related research

Business Analytics Lab (Undergraduate Researcher) *2018 – 2020*
- Conduct research on Machine Learning on Software Engineering: Source Code Embeddings, Software Clusterings, Layering Violations
- Research funded by the Crossminer project, supported by *Horizon 2020* grant
- Research 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–*
- *Project: Sampling from high-dimensional log-concave densities*

- Develop software for the efficient sampling from high-dimensional log-concave densities using first-order oracles in (un)-truncated settings [code]
- 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 Languaging Processing & Data Mining Methods and Practices. [code]. Internet Archive Dataset: [data]
  - 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++, Java, JavaScript/TypeScript, Bash, OCaml, PHP, R, SQL
Machine Learning Frameworks PyTorch, Pyro, Tensorflow Keras, Sklearn, spaCy
Data Analysis and Visualization matplotlib, MATLAB, pandas, Bash
Scientific Programming SAGE, Octave, MATLAB, Scilab, NumPy, SciPy, OpenCV, NetworkX
Databases MySQL, MongoDB, PostgreSQL, Firebase
Version Control Git, Subversion

Honors & Awards

- Cornell New Student Fellowship (first-year). Cornell University.
- 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. Member of the GFOSS-OTA, and GeomScale open-source organizations.

References available upon request	Jon Kleinberg (PhD Advisor, kleinberg@cornell.edu), Dimitris Fotakis (U/G Advisor, fotakis@cs.ntua.gr), Diomidis Spinellis (Research Advisor, dds@aueb.gr), Vasilis Kostakis (Harvard BKC, kostakis@law.harvard.edu)
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