PARIS SYMINELAKIS

PhD Candidate, Electrical Engineering
Stanford University

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EDUCATION

Stanford University, USA — Sep. 2015 - pres.
Doctor of Philosophy (PhD) in Electrical Engineering — **GPA**: 3.8/4.0
Concentration: Theoretical Computer Science
Adviser: Professor Moses Charikar

Stanford University, USA — Sep. 2012 - Dec. 2014
Master of Science (MSc) in Statistics — **GPA**: 3.8/4.0
Concentration: Probability Theory, Compressed Sensing

National Technical University of Athens (NTUA), Greece — Sep. 2006 - Mar 2012
Diploma (5y) in Electrical and Computer Engineering — **GPA**: 9.22/10.0
Concentration: Signal Processing, Theoretical Computer Science — **Summa Cum Laude (top 3%)**
Thesis: *Influence and Exploit Strategies for Social Networks*
Adviser: Professor Dimitris Fotakis

RESEARCH INTERESTS

- **Theory**: Algorithms, Statistics, Optimization.
- **Applications**: Sublinear time Algorithms, Clustering, Compressed Sensing, Random Graphs.

PUBLICATIONS

Preprints

1. "Multi-Resolution Hashing for Fast Pairwise Summations", with Moses Charikar (February 2018).
2. "Efficient Density Evaluation for Smooth Kernels", with A. Backurs, P. Indyk, M. Charikar (to appear in FOCS, 2018).
3. "On the Spectrum of Dense Random Multigraphs", with Andrea Montanari (April 2013).

Published Articles

1. "Hashing-based-Estimators for Kernel Density in High Dimensions", with Moses Charikar. *Foundations of Computer Science 2017 (FOCS).*
2. "Navigability is a Robust Property", with Dimitris Achlioptas. *Workshop on Models and Algorithms for the Web 2015 (WAW).* **Journal Version:** Invited to Special Issue of *Internet Mathematics* (under preparation).
3. "Symmetric Graph Properties Have Independent Edges", with Dimitris Achlioptas. *International Colloquium on Automata, Languages, and Programming 2015 (ICALP).* **Journal Version:** *Information and Computation* 261P2 (2018), pp. 446-463.
4. "On the Efficiency of Influence and Exploit Strategies for Revenue Maximization under Positive Network Externalities", with Dimitris Fotakis. *Workshop in Internet and Network Economics 2012 (WINE).* **Journal Version:** *Theoretical Computer Science 539:68-86 (2014).*
5. "Identifying Drug Effects via Pathway Alterations using an Integer Linear Programming Optimization Formulation on Phosphoproteomic Data", with A. Mitsos, I.N.Melas, A.D. Chairakaki, J. Saez-Rodriguez, L.G. Alexopoulos. **Journal Version:** *PLoS Comput Biol 5(12): e1000591 (2009).*

TEACHING EXPERIENCE

Stanford University, Teaching Assistant

- CS369H: *Hierarchies of Integer Programming Relaxations* (Professor Moses Charikar) (Spring 2017)

- CS369G: *Algorithmic Techniques for Big Data* (Professor Moses Charikar) (Spring 2016)
- CS224W: *Social and Information Network Analysis* (Lada Adamic PhD) (Fall 2015)
- CS224W: *Social and Information Network Analysis* (Professor Jure Leskovec) (Fall 2014)
- EE263: *Intro. Linear Dynamical Systems* (Alex Lemon) (Summer 2014)
- EE365: *Stochastic Control* (Professor Sanjay Lall) (Spring 2014)

National Technical University of Athens, Course Assistant

- *Algorithms and Complexity* (Professor Dimitris Fotakis) (Winter 2011)

WORK EXPERIENCE

Technicolor, Research and Innovation Los Altos, CA
Business: User Analytics March 2015 - August 2015
Research Intern

- `Spectral Techniques for Clustering Large Networks:` showed how popular methods such as Spectral Clustering, Regularized Spectral Clustering and Modularity Maximization can be derived as approximations to Maximum Likelihood under low rank constraints.
- `Exponential Family PCA and Matrix Completion:` designed improved algorithms based on Alternating Minimization using the framework of Alternating Directions Method of Multipliers (ADMM).
- `Information Geometric PCA for Heterogeneous Data:` used spectral initialization and Non Linear Riemannian Conjugate Gradient Method to solve low rank ML problems when features are of different nature, e.g. binary, count data, continuous.

INVITED TALKS

T1. "Convex Random Graph Models", *Theory Seminar, Microsoft Research, Silicon Valley.* June 2014

PROGRAMMING

- Programming: Python, Matlab, C++, C.
- Technical Software: LaTeX,