Dmitry Shemetov

Personal Data

Place and Date of Birth: Kiev, Ukraine | January 2nd, 1990
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About Me

I am a Ph.D. candidate in applied mathematics working on theoretical and algorithmic problems in distributed machine learning systems. I want to help people scale ML systems.

Education

July 2013-2020 Ph.D. in Applied Mathematics, **University of California, Davis**
Advisor: Prof. James Sharpnack

2008-2012 B.S. in Pure Mathematics, **Florida State University**
Magna Cum Laude, with minors in computer science and physics
Advisor: Alec Kercheval

Employment and Experience

2017 Research Intern at the Center for Nonlinear Studies
Los Alamos National Laboratory

2015 - Present Graduate Student Researcher at the Mathematics Department
University of California, Davis

2013 - Present Teaching Assistant at the Mathematics Department
University of California, Davis

Research Projects

2018 - present **Statistical Limits of Distributed Systems**
Studied the statistical limits imposed by distributed systems with memory constraints. Work in progress with James Sharpnack

2018 **Estimating Graphlets in Large Graphs**
Refactored the GraphletLift algorithm that estimates graphlet statistics in large graphs for scaled performance on a 2.9M-node Facebook data set. Paper submitted and in review.

2017 **Online Estimation of Power Transmission Parameters**
Performed extensive simulations in Julia and used JuliaOpt to perform sparse and low-rank constrained optimization. Joint work with Mark Vuffray and Andrey Lokhov (published PSCC 2018 conference).

2015 - 2017 **Hidden Markov Model Inference**
Studied stochastic process inference using Hidden Markov Models with Jim Crutchfield.

Publications

2018 *"Online Learning of Power Transmission Dynamics"*
with Andrey Lokhov, Marc Vuffray, *Dmitry Shemetov*, Deepjyoti Deka, Michael Chertkov
Published in PSCC2018

Conferences

2018 *"Statistical Limits for Distributed Systems"*
Student Chapter Presentation, SIAM Annual Meeting in Portland

Relevant Coursework

Winter 2019	Advanced Machine Learning with James Sharpnack
Spring 2018	Mathematical Statistics with Miles Lopes
January 2017	Mathematical Foundations of Machine Learning with Michael Wolf
Spring 2016	Time Series Analysis with Alexander Aue
Spring 2016	Network Theory with Raissa D'Souza
Fall 2016	Numerical Optimization with Michael Friedlander
Fall 2015	Probability Theory with Ethan Anderes
Fall 2015	Stochastic Dynamics with Albert Fannjiang

Teaching

2013 - present Teaching Assistant at University of California, Davis
Held weekly discussion sections and prepared supplementary course materials for a number of courses, including:
· Calculus and Calculus for Biology Majors
· Linear Algebra and Differential Equations
· Real Analysis and Fourier Analysis
· Probability Theory and Stochastic Processes

Service

January 2017 Co-organizer of Davis Math Conference 2017

Professional Memberships

2018 Society of Industrial and Applied Mathematics (SIAM)

References

James Sharpnack Statistics Department, University of California, Davis
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