



Zach Siegel

Coder and Teacher

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Me

I am passionate about optimization. I like to bring together recent and proven technologies to create solutions that help people. I also strive for freedom and dignity for all people, and actively contribute to several volunteer organizing projects in LA, including the Stop LAPD Spying Coalition and IfNotNow.

Education

Pomona College
BA in Mathematics, 2014. Computer Science minor. GPA 3.63.
Indian Institute of Technology, Kanpur
Mathematics Department, Spring 2013.

Career

STEM Tutor at Tutor Me LA *June 2016 - present*
Private tutoring of UCLA students as part of the UCLA Guardian Scholars scholarship.

Tutor for Incarcerated Youth at M&I Education Consulting *March 2015 - October 2017*
Math and CS tutoring for incarcerated youth and foster youth through M & I Education Consulting in Long Beach, CA.

Founder at GroupThere *May 2017 - present*
Launched a carpool optimization tool at grouptherenow.com. Minimizes drive-time across groups of 2-100. Configured for activist organizations. "Bee Swarm for Cars".

Developer at FactoryOfEverything *August 2016 - March 2017*
Developed a model for purchasing, production, shipping, and holding over a factory-warehouse-retail system. Forecasting using classical signal processing, regression, and machine learning. Implemented MVP in MATLAB. Planned use-case: optimizing a SoCal cosmetics factory group.

Research

Predictive Policing in Los Angeles *2017*
Stop LAPD Spying Coalition
Implemented LAPD's "hotspot"-generation algorithm. Compared hotspots to historical arrest, citation, and crime report data from the City of Los Angeles.

Community-generated report is entitled "Predictive Policing in Los Angeles".

**Generative Models
And Sparse Coding** 2014

Department of Mathematics, Pomona College

Formalized connections between the "Boltzmann Machine Distribution" and state-of-the-art unsupervised learning techniques.

**Anomaly Detection
Using Dictionary Learning** 2013

University of Minnesota, Minneapolis

Achieved state-of-the-art unsupervised detection of anomalous image and video data using dictionary learning and sparse coding. Part of an NSF-funded REU.

**Aquatic Insect Populations' Response
To Time-Varying Reproductive Rates** 2012

Oregon State University

Modeled insect populations in MATLAB using partial differential equations. Developed field data collection methodology to study model accuracy. Part of an NSF-funded REU.

Zero-Sum Flows of the Linear Lattice 2012

Department of Mathematics, Pomona College

Proved conditions for bounds on network flows in a generalization of the boolean lattice

Honors

Outstanding Presentation Award 2014

Joint Mathematics Meeting, Baltimore, MD

Awarded to 15% of undergraduate research groups presenting work at JMM (the most-attended national mathematics conference) for summer 2013 research.

Llewellyn Bixby Mathematics Prize 2012

Department of Mathematics, Pomona College

Awarded annually to the student with highest achievement within the Department.

Skills

Python	AWS, Heroku	R
Javascript, AngularJS	HTML	MATLAB
Java	SQL, ORM	Mathematica
C++	COIN-OR, GUROBI	LaTeX