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