Jake Soloff

Education

Starting Fall	**PhD Student, Statistics**, *University of California, Berkeley*.
2012–2016	**ScB, Mathematics**, *Brown University*.

Concentration Advisor: Richard Evan Schwartz
Research Advisor: Erik Sudderth
Coursework: computational statistics, measure theory, information theory, recent applications of probability and statistics, stochastic epidemic models, computational cognitive science, complex analysis, representation theory, probabilistic graphical models, game theory, quantum mechanics, calculus on manifolds, probability theory, stochastic processes, graph theory.

Interests

Computational statistics, Bayesian nonparametric statistics, computationally adaptive and scalable inference, combinatorial stochastic processes, graphons and RWREs.

Awards and Honors

2016	Jerome L. Stein Memorial Award (for undergraduate excellence in applied math)
2015	Phi Beta Kappa (elected junior year)
2012–2016	Sidney E. Frank Scholarship (Brown, Full Funding)
2011	Dean's Scholarship (Brown, Summer Session Funding)

Experience

Present	**NPBayes Research**, Learning, Inference, and Vision Group, Brown.

Using Bayesian nonparametrics to model multi-resolution time series. Derived and implemented part of variational inference procedure for a nonparametric HMM with nonparametric emission distributions, contributing to Mike C. Hughes' open-source Python package BNPy.

2015	**Personalization Intern**, The New York Times.

Generalized topic regression model for recommendation engine to incorporate multiple behavior signals. Implemented and tested a real-time graph-diffusion-based rec engine, obtaining over four times the mean recall as the original.

2014	**Data Science Intern**, FarmLogs.

Utilized large satellite image databases and existing research on remote sensing and statistical shape-modeling to predict crop growth stage across a farm. Final product went into software available to over a third of American farmers.

2013	**Computational Intern**, Institute for Brain and Neural Systems, Brown.

Devised simulations to measure the distribution of energy deposited during radiation therapy.

2012	**Graph Theory Research**, Department of Math and CS, Arcadia University.

Let $P_v(G)$ be the subgraph of edges on shortest paths from v in G. I proved (among other things) that this operation splits over the product, i.e. $P_{(v,w)}(G \mathbin{\square} H) = P_v(G) \mathbin{\square} P_w(H)$.

Published Work

1. **J. A. Soloff**, R. A. Márquez, and L. M. Friedler, Products of geodesic graphs and the geodetic number of products. *Discussiones Mathematicae Graph Theory*, Vol. 35, 2015.

2. J. Shriver, **J. A. Soloff**, and N. Molen. Data driven farming: delivering the benefits of remotely sensed data and decision support tools to farmers. *American Geophysical Union*, Annual Meeting, 2014.

Talks

Nov 2015	Learning, Inference, and Vision Group, Brown University.
Aug 2015	Research and Development Data Group, The New York Times.
Dec 2014	Annual Meeting, American Geophysical Union.

Teaching

Rhode Island Department of Corrections

Spring 2016	Teaching Assistant, **Introductory Geography** (GEOG 1010).

Brown University

Fall 2015	Curricular Advising Fellow, **Crime and the City** (URBN 1230).
Spring 2015	TA and Grader, **Recent Applications of Probability and Statistics** (APMA 2610).
Fall 2014	TA and Grader, **Computational Probability and Statistics** (APMA 1690).
Fall 2014	Teaching Assistant, **Crime and the City** (URBN 1230).

Languages

Spanish	**Beginner**

Computer skills

- Experience using Python, Matlab, LaTeX, Mathematica, and more.
- Version control with GitHub and Bitbucket for open source and team projects.
- Experience sharing results with IPython and Plotly.

Undergraduate Activities

Radio host at Brown Student and Community Radio.
Co-organizer for the Symposium for Undergrads in the Mathematical Sciences.
Attended regular Pattern Theory and Machine Learning seminars.
Former bike mechanic at Bikes@Brown.
Homeless outreach volunteer at Housing Opportunities for People Everywhere.

Contact

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