Keyon Vafa

Columbia University
Department of Statistics
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Interests

Machine learning, approximate Bayesian inference, causal inference, deep learning

Education

Columbia University 2016 -
Ph.D. Computer Science
Advisor: David Blei

Harvard University 2012 - 2016
B.A. (honors) Computer Science and Statistics

Awards and Fellowships

National Science Foundation, Graduate Research Fellow ($34,000/year)	2016 - 2019
Columbia University Dean's Fellow (full graduate funding)	2016 -
Graduated from Harvard magna cum laude	2016
Elected to Phi Beta Kappa Society	2016
Awarded high honors for undergraduate thesis	2016
Bok Center Certificate of Distinction in Teaching	2015
John Harvard Scholar (grade point average in top 5% of class)	2013 - 2015

Work Experience

Research Intern, Facebook Artificial Intelligence Research 2017
Researched new methods for causal inference using deep learning, with applications to Facebook data. Paper upcoming.

Data Science Intern, Facebook 2015
Queried data with Apache Hive and Presto to model Facebook traveling patterns, city categorizations, and tourist engagement levels.

Software Engineering Intern, Facebook 2014
As member of Data Science Infrastructure team, created dashboards with relevant statistics for data scientists and implemented historical experiment repository.

Research Experience

Deep neural networks for estimation of heterogeneous causal effects 2017 -
Supervised by Alexander Peysakhovich

Worked on methods for estimating heterogeneous effects in instrumental variable models using deep learning. Paper upcoming.

Training and inference for deep Gaussian processes 2016
Supervised by Alexander Rush

Proposed stochastic optimization inference method for deep Gaussian Processes (a regression model that combines Gaussian processes with deep architectures) for undergraduate thesis. Accepted as workshop paper at NIPS.

Price discrimination in the Princeton Review's online SAT tutoring service 2015
Supervised by Latanya Sweeney

Uncovered evidence of geographic-based price discrimination for Princeton Review's online tutoring service. Published in Journal of Technology Science, presented to Federal Trade Commission in Washington D.C., and featured in Propublica and on the Today Show on NBC.

Predicting restaurant hygiene with Yelp 2014 - 2015
Supervised by Michael Luca

Trained Support Vector Machines and Supervised LDA as methods to predict health inspection scores for restaurants in San Francisco using the text of Yelp reviews.

Selected Posters

Training Deep Gaussian Processes with Sampling, *NIPS Advances in Approximate Bayesian Inference Workshop*, Barcelona, Spain. 2016

Conference Reviewing

International Conference on Machine Learning 2017
Neural Information Processing Systems 2017

Teaching Experience

Department of Computer Science, Harvard University
Teaching Fellow, CS 281: Advanced Machine Learning (graduate level) 2015
Professor: Finale Doshi-Velez

Teaching Fellow, CS 181: Introduction to Machine Learning 2015
Professor: Ryan Adams

Languages and Skills

Python (and PyTorch), R (and Stan), SQL, Java, PHP
English (native), French (advanced), Farsi (proficient)
Long distance running (ran 2016 Boston Marathon)