Keyon Vafa

Columbia University
Department of Statistics
New York, NY

keyon.vafa@columbia.edu
www.keyonvafa.com

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
Data Science Intern (Places Team), **Facebook** 2015
Software Engineer Intern (Data Science Infrastructure), **Facebook** 2014

Research Experience

Deep neural networks for estimation of heterogeneous causal effects 2017 -
Joint work with Alexander Peysakhovich and Dean Eckles

We're employing deep neural networks to estimate heterogeneous causal effects in instrumental variable models. Presented at Conference on Digital Experimentation at MIT. Working paper.

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. Presented 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.

Selected Papers

D. Eckles, A. Peysakhovich, and **K. Vafa**. Deep neural networks for interpretable instrumental variable-based estimation of heterogeneous causal effects. *Conference on Digital Experimentation*, MIT. 2017

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

Conference Reviewing

International Conference on Machine Learning 2017
Neural Information Processing Systems 2017
Advances in Approximate Bayesian Inference Workshop (NIPS) 2017
International Conference on Learning Representations 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 (+ PyTorch and TensorFlow), R (+ Stan), SQL, Java, PHP
English (native), French (advanced), Farsi (proficient)
Long distance running (ran 2016 Boston Marathon)