

## Summary

I primarily study theoretical computer science and statistics, and have also worked on applications in natural language understanding, neuroscience, robotics, and economics.

I am interested in any opportunities involving the application of algorithms and statistics, particularly to scientific inquiry and artificial intelligence.

## Education

**Columbia University**, September 2017 — present

Ph.D. in Computer Science

Advisors: Professor Daniel Hsu, Professor Alex Andoni

Topics: Theoretical machine learning, algorithms, statistics

Affiliations: [Columbia Data Science Institute](#), [Machine Learning Group](#), [Theory of Computation Group](#)

**Princeton University**, September 2012 — June 2017

A.B. Mathematics, M.S.E. Computer Science

Master's Thesis: Temporally Dependent Mappings Between fMRI Responses and Natural Language Descriptions of Natural Stimuli

Advisors: Professor Sanjeev Arora, Professor Ken Norman

Affiliations: [Unsupervised Learning Group](#), [ML Theory Group](#), [Princeton Neuroscience Institute](#), [Computational Memory Lab](#)

## Research

### Conference and Journal Proceedings

*Sage: A Differentially Private Machine Learning Platform based on Tensorflow-Extended.* Riley Spahn, Mathias Lécuyer, **Kiran Vodrahalli**, Roxana Geambasu, Daniel Hsu. Oral Presentation. Symposium on Operation Systems Principles, October 2019.

*Learning to Plan with Logical Automata.* Brandon Araki\*, **Kiran Vodrahalli**\*, Thomas Leech, Cristian Ioan Vasile, Mark Donahue, Daniela Rus. Spotlight Presentation and Poster. Robotics: Science and Systems, June 2019.

*Attribute-Efficient Learning of Monomials over Highly-Correlated Variables.* Alex Andoni\*, Rishabh Dudeja\*, Daniel Hsu\*, **Kiran Vodrahalli**\*. Oral Presentation. Algorithmic Learning Theory, March 2019.

*A Large Self-Annotated Corpus for Sarcasm.* Mikhail Khodak, Nikunj Saunshi, **Kiran Vodrahalli**. Poster. Language Resources and Evaluation, May 2018.

*A Compressed Sensing View of Unsupervised Text Embeddings, Bag-of-n-Grams, and LSTMs.* Sanjeev Arora\*, Mikhail Khodak\*, Nikunj Saunshi\*, **Kiran Vodrahalli**\*. Poster. International Conference on Learning Representations, April 2018.

*A Temporal Decay Model for Mapping between fMRI and Natural Language Annotations.* **Kiran Vodrahalli**, Cathy Chen, Viola Mocz, Christopher Baldassano, Uri Hasson, Sanjeev Arora, Kenneth A. Norman. Poster. Cognitive Computational Neuroscience, September 2017.

*Mapping between fMRI responses to movies and their natural language annotations.*  
**Kiran Vodrahalli**, Po-Hsuan Chen, Yingyu Liang, Christopher Baldassano, Janice Chen, Christopher Honey, Uri Hasson, Peter Ramadge, Kenneth A. Norman, Sanjeev Arora. Neuroimage, June 2017.

## Teaching

### Columbia University

#### Courses

Fall 2018: TA for COMS 6998 — Computation and the Brain (graduate)

### Princeton University

#### Courses

Spring 2017: TA for COS 511 — Theoretical Machine Learning (graduate)

Fall 2016: TA for COS 397 — Independent Work Seminar in NLP

Spring 2014: Grader for COS 226 — Intro Algorithms

Fall 2013 — 2014: COS Lab TA for COS 126, 226, 217 — Intro Algorithms and Systems

#### Mentorship

Spring 2017: Advised the junior independent work of Cathy Chen (COS '18) and Viola Mocz (NEU '18) in neuroscience with Professor Ken Norman

Spring 2014 — Fall 2016: Seminar Leader for the NLP-ML Reading Group with Dr. Christiane Fellbaum

## Industry Experience

### Palantir Technologies, IQE Intern (Summer 2015)

Worked on adding support for distributed systems frameworks for machine learning pipelines with Spark, YARN, and HDFS.

### Intel Corporation, Perceptual Computing Intern (Summer 2011 — 2012, 2013)

Worked on basic computer vision algorithms for depth-cameras analogous to Microsoft Kinect, 3D image capture, basic natural language processing, speech recognition evaluation. Investigated the feasibility of using brain-computer interfaces. Made a few gesture-based demos as well.

## Awards

### NSF Graduate Research Fellowship Award

Awarded March 2016 for Computer Science in the subfield Machine Learning.