Kiran Vodrahalli

https://kiranvodrahalli.github.io

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Summary

I primarily study theoretical computer science, with a focus on the foundations of machine learning, optimization, and statistics as well as their 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 (cum laude), 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

Deep Bayesian Nonparametric Learning of Rules and Plans from Demonstrations with a Learned Automaton Prior. Brandon Araki, **Kiran Vodrahalli**, Thomas Leech, Cristian Ioan Vasile, Mark Donahue, Daniela Rus. AAAI Conference on Artificial Intelligence, February 2020.

Privacy Accounting and Quality Control in the Sage Differentially Private ML Platform. Mathias Lécuyer, Riley Spahn, **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.

Invited Talks

Yahoo Research, New York, NY, August 2019.

Princeton Neuroscience Institute, Princeton, NJ, September 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

Service

Reviewing
Reviewer for ICML 2020.

Awards

Spotlight Prize at New York Academy of Sciences Annual ML Symposium (2019, 2020)
Selected as one of ten ($\approx$ top 10%) speakers to give a spotlight presentation in addition to a poster.

NSF Graduate Research Fellowship Award
Awarded March 2016 for Computer Science in the subfield Machine Learning.

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 analagous 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.