Kiran Vodrahalli

https://kiranvodrahalli.github.io

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Summary

I am interested in opportunities involving the theoretical study and application of inference: Namely, algorithms, statistics, optimization, and other related fields. I am particularly interested in natural language and neuroscience applications.

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, Princeton Neuroscience Institute, Computational Memory Lab

Research

Preprints

Attribute-Efficient Learning of Monomials over Highly-Correlated Variables. Alex Andoni*, Rishabh Dudeja*, Daniel Hsu*, Kiran Vodrahalli*. In submission.

Learning to Plan with Logical Automata. Brandon Araki*, Kiran Vodrahalli*, Cristian-Ioan Vasile, Daniela Rus. In submission.

Conference and Journal Proceedings

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, Apr 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, Sep 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, Jun 2017.

Workshop Presentations

Mapping between Natural Movie fMRI Responses and Word-Sequence Representations. Kiran Vodrahalli, Po-Hsuan Chen, Yingyu Liang, Janice Chen, Esther Yong, Christopher Honey, Peter J. Ramadge, Kenneth A. Norman, Sanjeev Arora. Oral Presentation and Poster. NIPS Workshop on Representation Learning in Artificial and Biological Neural Networks, Dec 2016.

A Semantic Shared Response Model. Kiran Vodrahalli, Po-Hsuan Chen, Janice Chen, Esther Yong, Christopher Honey, Peter J. Ramadge, Kenneth A. Norman, Sanjeev Arora. Oral Presentation and Poster. ICML Workshop on Multi-view Representation Learning, Jun 2016.

Teaching

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 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.

Awards

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