

Justin Eldridge

✉ eldridge@cse.ohio-state.edu

🏠 <http://web.cse.ohio-state.edu/~eldridge.48/>

Research Interests

- Statistical consistency of clustering methods.
- Foundations of unsupervised learning.
- Applications of machine learning to scientific data.

Education

- Ph.D. in Computer Science
The Ohio State University, expected 2017.
Advisors: Mikhail Belkin and Yusu Wang.
GPA: 3.918
- M.S. in Computer Science
The Ohio State University, 2016.
- B.S. in Physics, with Honors
B.S. in Applied Mathematics
The Ohio State University, 2011.
GPA: 3.938, *summa cum laude*

Academic Positions

- Graduate visitor. (Spring 2017)
Simons Institute for the Theory of Computing.
Program on Foundations of Machine Learning.
- Doctoral research assistant. (2012-Current)
The Ohio State University.
Department of Computer Science and Engineering.
- Graduate research assistant. (Summer 2012)
The Ohio State University.
Center for Cognitive Science.
- Graduate teaching assistant. (2011-2012)
The Ohio State University.
Department of Computer Science and Engineering.
- Undergraduate research assistant. (2010)
The Ohio State University.
Department of Physics.
- Undergraduate research assistant. (Summer 2009)
REU at The University of California, Davis.
Department of Physics.

Awards

- 2017 Presidential Fellowship. The Ohio State University.
- Mark Fulk Award, Best Student Paper, COLT 2015.
- 2016 Neural Information Processing Systems (NIPS) Student Travel Award.
- 2012 Summer GRA, Center for Cognitive Science, The Ohio State University.
- Smith Senior Award, Department of Physics, The Ohio State University.
- National Merit Finalist.

Refereed Publications

- *Unperturbed: spectral analysis beyond Davis-Kahan.*
J. Eldridge, M. Belkin, Y. Wang
Preprint, 2017.
- *Graphons, mergeons, and so on!*
J. Eldridge, M. Belkin, Y. Wang
Neural Information Processing Systems (NIPS), 2016.
Full oral, top ~2% of submissions.
- *Beyond Hartigan Consistency: Merge Distortion Metric for Hierarchical Clustering.*
J. Eldridge, M. Belkin, Y. Wang.
The 28th Conference on Learning Theory (COLT), 2015.
Mark Fulk Award, best student paper.
- *Robust features for the automatic identification of autism spectrum disorder in children.*
J. Eldridge, A.E. Lane, M. Belkin, S. Dennis.
Journal of Neurodevelopmental Disorders, 2014; 6(1):12. doi: 10.1186/1866-1955-6-12.
- *Support Vector Machine (SVM) Analysis of Auditory Oddball Event-Related Potentials (ERP) Classifies Toddlers with and without Early Signs of Autism.*
A.E. Lane, J. Eldridge, K. Harpster, S. Dennis, T. Shahin, M. Belkin.
International Meeting for Autism Research (IMFAR), 2012.

Other Publications

- *Graphons, mergeons, and so on!*
J. Eldridge, with M. Belkin, Y. Wang.
Abstract, talk. Workshop on Geometry and Machine Learning, 2016.
- *Denali: A tool for visualizing scalar functions as landscape metaphors.*
J. Eldridge, M. Belkin, Y. Wang.
Preprint.

Other Talks

- Information Theory and Applications Workshop, Graduation Day Talk. La Jolla, California. February 2017.
- Machine Learning Seminar, Laboratory for Computational and Statistical Learning, Italian Institute of Technology, Genova, Italy. December 2016.

Software

- *Denali*
Cross-platform, open source interface for visualizing hierarchies as landscape metaphors.
<http://denali.cse.ohio-state.edu>