

Vincent Q. Vu

Department of Statistics
The Ohio State University
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Current Position

Assistant Professor 2012–
Department of Statistics, The Ohio State University

Education

Ph.D., Statistics, University of California, Berkeley 2009
Thesis: “High Dimensional Estimation and Data Analysis: Entropy and Regularized Regression”
Committee: Bin Yu (advisor), John Rice, and Jack Gallant
GPA: 4.0/4.0

M.A., Statistics, University of California, Berkeley 2005

B.A., Statistics, University of California, Berkeley 2002

Professional Experience

Assistant Professor 2012–
Department of Statistics, The Ohio State University

NSF Postdoctoral Fellow 2009–2012
Department of Statistics, Carnegie Mellon University

Graduate Research Assistant 2006
CCS-5: Discrete Simulation Sciences, Los Alamos National Laboratory

Graduate Research Assistant 2005
D-1: Statistical Sciences, Los Alamos National Laboratory

Software/Systems Design Engineer 1996–2002
Creative Advanced Technology Center, Scotts Valley, CA

Honors & Awards

Best Paper Award (with J. Lei) 2012
International Conference on Artificial Intelligence and Statistics (AISTATS)

Outstanding Graduate Student Instructor 2007
Graduate Division, University of California, Berkeley

Grants & Fellowships

- Statistical Learning for High-Dimensional Relational Data* 2015–2018
National Science Foundation (DMS-1513621)
- Mathematical Sciences Postdoctoral Research Fellowship* 2009–2012
National Science Foundation (DMS-0903120)

Papers

PREPRINTS

1. V. Q. Vu and J. Lei. Squared-norm empirical process in Banach space. 2012.

PEER-REVIEWED PUBLICATIONS

11. L. Castellanos, V. Q. Vu, S. Perel, A. B. Schwartz, and R. E. Kass. A multivariate Gaussian process factor model for hand shape during reach-to-grasp movements. *Statistica Sinica* 25.1 (2015), pp. 5–24.
10. J. Lei and V. Q. Vu. Sparsistency and agnostic inference in sparse PCA. *Annals of Statistics* 43.1 (2015), pp. 299–322.
9. V. Q. Vu, J. Cho, J. Lei, and K. Rohe. Fantope projection and selection: a near-optimal convex relaxation of sparse PCA. In: *Advances in Neural Information Processing Systems (NIPS) 26*. Ed. by C. Burges, L. Bottou, M. Welling, Z. Ghahramani, and K. Weinberger. 2013.
8. V. Q. Vu and J. Lei. Minimax sparse principal subspace estimation in high dimensions. *Annals of Statistics* 41.6 (2013), pp. 2905–2947.
7. V. Q. Vu and J. Lei. Minimax rates of estimation for sparse PCA in high dimensions. In: *Proceedings of the Fifteenth International Conference on Artificial Intelligence and Statistics (AISTATS)*. Ed. by N. Lawrence and M. Girolami. Vol. 22. JMLR W&CP. Best paper award. 2012, pp. 1278–1286.
6. V. Q. Vu, P. Ravikumar, T. Naselaris, K. N. Kay, J. L. Gallant, and B. Yu. Encoding and decoding V1 fMRI responses to natural images with sparse nonparametric models. *Annals of Applied Statistics* 5.2B (2011), pp. 1159–1182.
5. P. Ravikumar, V. Q. Vu, B. Yu, T. Naselaris, K. N. Kay, and J. L. Gallant. Nonparametric sparse hierarchical models describe V1 fMRI responses to natural images. In: *Advances in Neural Information Processing Systems (NIPS) 21*. Ed. by D. Koller, D. Schuurmans, Y. Bengio, and L. Bottou. Spotlight presentation. 2009.
4. V. Q. Vu, B. Yu, and R. E. Kass. Some statistical issues in estimating information in neural spike trains. In: *Acoustics, Speech, and Signal Processing, IEEE International Conference on*. IEEE Computer Society, 2009, pp. 3509–3512.
3. V. Q. Vu, B. Yu, and R. E. Kass. Information in the non-stationary case. *Neural Computation* 21 (2009), pp. 688–703.
2. V. Q. Vu, B. Yu, and R. E. Kass. Coverage adjusted entropy estimation. *Statistics in Medicine* 26.21 (2007), pp. 4039–4060.
1. G. Yan, H. D. Flores, L. Cuellar, N. Hengartner, S. Eidenbenz, and V. Q. Vu. Bluetooth worm propagation: mobility pattern matters! In: *ASIACCS '07: Proceedings of the 2nd ACM Symposium on Information, Computer and Communications Security*. New York, NY, USA: ACM, 2007, pp. 32–44.

Patents

2. L. Dahl, J.-M. Jot, V. Q. Vu, and D. Massie. Reverberation processor for interactive audio applications. 6,978,027. 2000.
1. E. Lange, S. Dicker, V. Q. Vu, and S. Hoge. Re-use of special purposed registers as general purpose registers. 6,289,435. 1999.

Presentations

INVITED TALKS

16. A multivariate Gaussian process factor model for hand shape during reach-to-grasp movements. ICSA Applied Statistics Symposium/Graybill Conference. Fort Collins, Colorado, June 17, 2015.
15. Sparse PCA via Fantope projection and selection. Institute for Operations Research and the Management Sciences (INFORMS) Annual Meeting 2014. San Francisco, California, Nov. 20, 2014.
14. A new approach to sparse PCA. Department of Statistics, University of Michigan. Ann Arbor, Michigan, Oct. 21, 2014.
13. A new approach to sparse PCA. Department of IOMS, Stern School of Business, New York University. New York, New York, Oct. 3, 2014.
12. Sparse PCA via Fantope projection and selection. International Indian Statistical Association Conference. Riverside, California, July 11, 2014.
11. Fantope projection and selection. Conference on Statistical Learning and Data Mining (SLDM). Durham, North Carolina, June 11, 2014.
10. Synergy and variation in hand shape during reach-to-grasp movements. OSU/CCF/CWRU Biostatistics Symposium. Columbus, Ohio, Apr. 10, 2014.
9. Fantope projection and selection. Information Theory and Applications (ITA) Workshop. San Diego, California, Feb. 14, 2014.
8. Sparse PCA in high dimensions. Artificial Intelligence Seminar, Ohio State University. Columbus, Ohio, Feb. 6, 2014.
7. Sparse principal components and subspaces. Department of Statistics, University of Wisconsin-Madison. Madison, Wisconsin, Oct. 2, 2013.
6. Sparse principal components and subspaces. Department of Statistics, Rice University. Houston, Texas, Sept. 16, 2013.
5. Sparse principal components and subspaces. Statistical Machine Learning Seminar, Institute of Statistical Mathematics. Tokyo, Japan, July 11, 2013.
4. Sparse principal subspaces. Conference on Statistical Learning and Data Mining (SLDM). Ann Arbor, Michigan, June 8, 2012.
3. Minimax rates of estimation for sparse PCA in high dimensions. International Conference on Artificial Intelligence and Statistics (AISTATS). La Palma, Spain, Apr. 23, 2012.
2. Some statistical issues in estimating information in neural spike trains. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP). Taipei, Taiwan, Apr. 24, 2009.
1. Coverage adjusted entropy estimation. Institute of Statistical Mathematics. Tokyo, Japan, July 2007.

INVITED POSTERS

3. Fantope projection and selection: a near-optimal convex relaxation of sparse PCA. Neural Information Processing Systems (NIPS). Stateline, Nevada, Dec. 7, 2013.
2. Sparse principal subspaces. IMS Meeting of New Researchers in Statistics and Probability. La Jolla, California, July 27, 2012.
1. Nonparametric sparse hierarchical models describe V1 fMRI responses to natural images. Neural Information Processing Systems (NIPS). Vancouver, Canada, Dec. 10, 2009.

Teaching

THE OHIO STATE UNIVERSITY

<i>Statistics 7560: Multivariate Analysis</i>	Sp 2013, Sp 2014, Sp 2015
<i>Statistics 7301: Advanced Statistical Theory I</i>	Au 2014, Au 2015
<i>Statistics 6730: Introduction to Computational Statistics</i>	Au 2012, Au 2013, Au 2014, Au 2015

CARNEGIE MELLON UNIVERSITY

<i>Statistics 36-722: Continuous Multivariate Analysis</i>	Spring 2012
<i>Statistics 36-350: Statistical Computing</i>	Fall 2011
<i>Statistics 36-464/664: Applied Multivariate Methods</i>	Spring 2011

UNIVERSITY OF CALIFORNIA, BERKELEY

<i>Statistics 135: Concepts in Statistics (GSI)</i>	Spring 2006, Spring 2009
<i>Statistics 248: Time Series Analysis (GSI)</i>	Fall 2006
<i>Statistics 131a: Statistical Inference for Social and Life Scientists (GSI)</i>	Fall 2004
<i>Statistics 2: Introduction to Statistics</i>	Fall 2003

Advising

PH.D. DISSERTATION COMMITTEE

Andrew Landgraf	6/2015
Sungmin Kim	4/2014
Zhiyu Liang	12/2013

PH.D. CANDIDACY EXAM COMMITTEE

Zhifei Yan	7/2015
Rohit Deshmukh (Mechanical & Aerospace Engineering)	8/2014
Andrew Landgraf	4/2014
Sungmin Kim	7/2013
Zhiyu Liang	12/2012

Departmental Service

DEPARTMENT OF STATISTICS, THE OHIO STATE UNIVERSITY

Seminar committee, member	2014, 2015
Ph.D. qualifying exam II committee, member	8/2013, 1/2014, 8/2014, 8/2015
Masters of Applied Statistics exam committee, member	11/2012, 1/2013

DEPARTMENT OF STATISTICS, UNIVERSITY OF CALIFORNIA, BERKELEY

Web committee, student member	2008
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University Service

GRADUATE SCHOOL, THE OHIO STATE UNIVERSITY

Ph.D. dissertation committee (CSE), graduate faculty representative	3/2015
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Editorial Service

<i>Associate editor</i> Journal of the American Statistical Association, Reviews	1/2014–present
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Journal reviewer

Annals of Applied Statistics, Annals of Statistics, Journal of the American Statistical Association, Journal of Computational and Graphical Statistics, Journal of Machine Learning Research, Journal of Multivariate Analysis, Journal of the Royal Statistical Society: Series B, Statistica Sinica, Statistics and Computing, Technometrics, Machine Learning, Neural Computation, Neural Processing Letters, Journal of Computational Neuroscience

Conference reviewer

Artificial Intelligence and Statistics (AISTATS), Neural Information Processing Systems (NIPS)

Professional Activities

Conference session chair

JSM 2013, ISBIS/ASA SLDM 2014, WNAR 2014, IISA 2014

President

Statistics Graduate Students Association, University of California, Berkeley

8/2006–8/2007

Member

Institute of Mathematical Statistics (IMS), American Statistical Association (ASA), Institute of Electrical and Electronics Engineers (IEEE)