

# Vincent Q. Vu

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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)