

# Andrew J. Holbrook, Ph.D.

Postdoctoral Scholar

Department of Human Genetics, University of California, Los Angeles

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## Research Interests

Bayesian inference, Markov chain Monte Carlo, dimension reduction, viral epidemiology, neural decoding

Dissertation title: *Geometric Bayes*; Advisor: Prof. Babak Shahbaba, Ph.D.

## Education

2013-2018, Ph.D., Statistics, University of California, Irvine, CA

2013-2015, M.S., Statistics, University of California, Irvine, CA

2005-2009, B.A., German and Classical Languages, University of California, Berkeley, CA

## Academic Awards and Scholarships

Savage Award, Theory and Methods (2018), Finalist

Carl W. Cotman Young Investigator Award (2018)

UC Irvine Graduate Dean's Dissertation Fellowship Award (2017-2018)

UCI MIND Aging Fellowship (2015-2017)

Robert L. Newcomb Memorial Endowed Graduate Student Award (2014)

## Refereed Publications

7. Tustison N, **Holbrook A**, Avants B, Roberts J, Cook P, Reagh Z, Stone J, Gillen D, Yassa M. *The ANTs longitudinal cortical thickness pipeline*. Journal of Alzheimer's Disease, In Press, 2019.
6. **Holbrook A**, Lumley T, Gillen D. *Estimating prediction error for complex samples*. Canadian Journal of Statistics, In Press, 2019.
5. Li L, **Holbrook A**, Shahbaba B, Baldi P. *Neural network gradient Hamiltonian Monte Carlo*. Computational Statistics, vol. 34, no. 1, pp. 281-299, 2019.
4. **Holbrook A**. *Differentiating the pseudo determinant*. Linear Algebra and its Applications, vol. 548, pp. 293-304, 2018.
3. **Holbrook A**, Lan S, Vandenberg-Rodes A, Shahbaba B. *Geodesic Lagrangian Monte Carlo over the space of positive definite matrices: with application to Bayesian spectral density estimation*. Journal of Statistical Computation and Simulation, vol. 88, no. 5, pp. 982-1002, 2018.
2. **Holbrook A**, Vandenberg-Rodes A, Fortin N, Shahbaba B. *A Bayesian supervised dual-dimensionality reduction model for simultaneous decoding of LFP and spike train signals*. Stat Journal, vol. 6, no. 1, pp. 53-67, 2017.
1. Grill J, **Holbrook A**, Pierce A, Hoang D, Gillen D. *Attitudes toward Potential Participant Registries*. Journal of Alzheimer's Disease, vol. 56, no. 3, pp. 939-946, 2017.

## Teaching

- Teaching Assistant, Stat 7 – Introduction to Probability and Statistics (Fall 2014, Summer 2015); Department of Statistics, University of California, Irvine

- Teaching Assistant, Stat 8 – Biostatistics (Winter 2015); Department of Statistics, University of California, Irvine
- Teacher, Mathematics and English as a Second Language (2010-2011); Dalian American International School

### Professional Experience

- Postdoctoral scholar with Prof. Marc A. Suchard, M.D., Ph.D. at the Department of Human Genetics, University of California, Los Angeles; Los Angeles, California (2018-present)
- Statistical consultant, the Alzheimer's Disease Research Center at the University of California, Irvine; Irvine, California (2015-2017)
- Statistical consultant, the Center for Statistical Consulting at the University of California, Irvine; Irvine, California (Winter and Spring 2014)
- Trainee, the Summer Institute for Training in Biostatistics at North Carolina State University and the Duke Clinical Research Institute; Raleigh, North Carolina (Summer 2013)
- Teacher, the Dalian American International School; Dalian, People's Republic of China (2010-2011)

### Service and Community Involvement

- Lead organizer, *Conference on philosophy of machine learning: knowledge and causality*. March 17-18, 2018 at the University of California, Irvine
- Member, American Statistical Association (2018-present)

### Journal Reviewer

Bayesian Analysis

IEEE Transactions on Industrial Electronics