

# Stanford

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## Scott W Linderman

Assistant Professor of Statistics and, by courtesy, of Computer Science and of Electrical Engineering

### Bio

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#### BIO

Scott is an Assistant Professor of Statistics and, by courtesy, Electrical Engineering and Computer Science at Stanford University. He is also an Institute Scholar in the Wu Tsai Neurosciences Institute and a member of Stanford Bio-X and the Stanford AI Lab. His lab works at the intersection of machine learning and computational neuroscience, developing statistical methods to analyze large scale neural data. Previously, Scott was a postdoctoral fellow with Liam Paninski and David Blei at Columbia University, and he completed his PhD in Computer Science at Harvard University with Ryan Adams and Leslie Valiant. He obtained his undergraduate degree in Electrical and Computer Engineering from Cornell University and spent three years as a software engineer at Microsoft before graduate school.

#### ACADEMIC APPOINTMENTS

- Assistant Professor, Statistics
- Assistant Professor (By courtesy), Computer Science
- Member, Bio-X
- Member, Wu Tsai Human Performance Alliance
- Member, Wu Tsai Neurosciences Institute

#### HONORS AND AWARDS

- Sloan Research Fellowship, Sloan Foundation (2022)
- Next Generation Leader, Allen Institute for Brain Science (2019-2022)
- Best Paper, International Conference on Artificial Intelligence and Statistics (2017)
- Postdoctoral Fellow, Simons Collaboration on the Global Brain (2016-2019)
- Leonard J Savage Award for Outstanding Dissertation in Applied Methodology, International Society for Bayesian Analysis (2016)
- National Defense Science and Engineering Graduate Fellow, Department of Defense (2011-2014)

#### BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Co-Chair of Projects Team, Neuromatch Academy (2022 - present)
- Scientific Advisory Board Member, Herophilus Inc (2019 - present)

#### PROFESSIONAL EDUCATION

- PhD, Harvard University , Computer Science (2016)
- SM, Harvard University , Computer Science (2013)
- BS, Cornell University , Electrical and Computer Engineering (2008)

## LINKS

- Linderman Lab Website: <http://slinderman.web.stanford.edu>

## Teaching

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### COURSES

#### 2023-24

- Applied Statistics II: STATS 305B (Win)

#### 2022-23

- Applied Statistics III: STATS 305C (Spr)
- Machine Learning Methods for Neural Data Analysis: CS 339N, NBIO 220, STATS 220, STATS 320 (Win)

#### 2021-22

- Applied Statistics III: STATS 305C (Spr)

#### 2020-21

- Applied Bayesian Statistics: STATS 271, STATS 371 (Spr)
- Machine Learning Methods for Neural Data Analysis: CS 339N, NBIO 220, STATS 220, STATS 320 (Win)

### STANFORD ADVISEES

#### Doctoral Dissertation Reader (AC)

Ari Beller, Lucas Encarnacion-Rivera, Youssef Faragalla, Grace Huckins, Elizabeth Jun, Rennie Kendrick, John Kochalka, Lavonna Mark, Josh Melander, Christopher Minasi, Linnie Warton

#### Postdoctoral Faculty Sponsor

Dan Biderman, Kelly Buchanan, Aditi Jha, David Zoltowski

#### Doctoral Dissertation Advisor (AC)

Julia Costacurta, Xavier Gonzalez, Amber Hu, Matthew MacKay, Jimmy Smith, Ian Christopher Tanoh, Libby Zhang, Yixiu Zhao

#### Master's Program Advisor

Derek Askaryar

#### Doctoral (Program)

Hyun Dong Lee, Alisa Levin

## Publications

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### PUBLICATIONS

- **Imaging whole-brain activity to understand behaviour** *NATURE REVIEWS PHYSICS*  
Lin, A., Witvliet, D., Hernandez-Nunez, L., Linderman, S. W., Samuel, A. T., Venkatachalam, V.  
2022
- **Weighing the evidence in sharp-wave ripples.** *Neuron*  
Linderman, S. W.  
2022; 110 (4): 568-570
- **Statistical neuroscience in the single trial limit.** *Current opinion in neurobiology*  
Williams, A. H., Linderman, S. W.  
2021; 70: 193-205

- **Fast deep neural correspondence for tracking and identifying neurons in *C. elegans* using semi-synthetic training.** *eLife*  
Yu, X., Creamer, M. S., Randi, F., Sharma, A. K., Linderman, S. W., Leifer, A. M.  
2021; 10
- **Animal pose estimation from video data with a hierarchical von Mises-Fisher-Gaussian model**  
Zhang, L., Dunn, T., Marshall, J., Olveczky, B., Linderman, S., Banerjee, A., Fukumizu, K.  
MICROTOME PUBLISHING.2021
- **Dynamic and reversible remapping of network representations in an unchanging environment.** *Neuron*  
Low, I. I., Williams, A. H., Campbell, M. G., Linderman, S. W., Giocomo, L. M.  
2021
- **Point process models for sequence detection in high-dimensional neural spike trains.** *Advances in neural information processing systems*  
Williams, A. H., Degleris, A., Wang, Y., Linderman, S. W.  
2020; 33: 14350-14361
- **Probabilistic Models of Larval Zebrafish Behavior Reveal Structure on Many Scales.** *Current biology : CB*  
Johnson, R. E., Linderman, S. n., Panier, T. n., Wee, C. L., Song, E. n., Herrera, K. J., Miller, A. n., Engert, F. n.  
2019
- **BehaveNet: nonlinear embedding and Bayesian neural decoding of behavioral videos**  
Batty, E., Whiteway, M. R., Saxena, S., Biderman, D., Abe, T., Musall, S., Gillis, W., Markowitz, J. E., Churchland, A., Cunningham, J., Datta, S., Linderman, S. W., Paninski, et al  
NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2019
- **Scalable Bayesian inference of dendritic voltage via spatiotemporal recurrent state space models**  
Sun, R., Linderman, S. W., Kinsella, I., Paninski, L., Wallach, H., Larochelle, H., Beygelzimer, A., d'Alche-Buc, F., Fox, E., Garnett, R.  
NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2019
- **Mutually Regressive Point Processes**  
Apostolopoulou, I., Linderman, S., Miller, K., Dubrawski, A., Wallach, H., Larochelle, H., Beygelzimer, A., d'Alche-Buc, F., Fox, E., Garnett, R.  
NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2019
- **Poisson-Randomized Gamma Dynamical Systems**  
Schein, A., Linderman, S. W., Zhou, M., Blei, D. M., Wallach, H., Wallach, H., Larochelle, H., Beygelzimer, A., d'Alche-Buc, F., Fox, E., Garnett, R.  
NEURAL INFORMATION PROCESSING SYSTEMS (NIPS).2019