

# Pengcheng Zhou

*Postdoctoral research scientist  
Columbia University in the City of New York*

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## CONTACT INFORMATION

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## POSITIONS

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**Postdoctoral Research Scientist** 2017-present  
*Columbia University*

- ▷ Department of Statistics  
Center for Theoretical Neuroscience  
Grossman Center for the statistics of mind
- ▷ Advisor: Liam Paninski

**Research Assistant** 2010-2011  
*University of Science and Technology of China*

- ▷ Super-resolution microscopy; Population analysis of the neuronal reverberation
- ▷ Advisor: Guoqiang Bi

## EDUCATION

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**Ph.D., Neuron Computation and Machine Learning** 2011-2016  
*Carnegie Mellon University*

- ▷ Center for the Neural Basis of Cognition, Machine Learning Department
- ▷ Advisor: Robert Kass
- ▷ Thesis: “Computational tools for identification and analysis of neuronal population activity ”

**B.Sc., Physics** 2006-2010  
*University of Science and Technology of China*

- ▷ Department of Optics and Optical Engineering, School of Physical Sciences
- ▷ Advisor: Guoqiang Bi

## PUBLICATIONS [\[Google Scholar\]](#)

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8. [Zhou, P.](#), Resendez, S.L., Rodriguez-Romaguera, J., Jimenez, J.C., Neufeld, S.Q., Giovannucci, A., Friedrich, J., Pnevmatikakis, E.A., Stuber, G.D., Hen, R., Kheirbek, M.A., Sabatini, B.L., Kass, R.E. and Paninski L., **2018**. Efficient and accurate extraction of in vivo calcium signals from microendoscopic video data. *eLife*, 7, p.e28728.
7. Jimenez, J.C., Su, K., Goldberg, A.R., Luna, V.M., Biane, J.S., Ordek, G., [Zhou, P.](#), Ong, S.K., Wright, M.A., Zweifel, L. and Paninski, L., **2018**. Anxiety Cells in a Hippocampal-Hypothalamic Circuit. *Neuron*.
6. Yu, K., Ahrens, S., Zhang, X., Schiff, H., Ramakrishnan, C., Fenno, L., Deisseroth, K., Zhao, F., Luo, M.H., Gong, L., He, M., [Zhou P.](#), Paninski L. and Li B., **2017**. The central amygdala controls learning in the lateral amygdala. *Nature neuroscience*, 20(12), p.1680.
5. Klaus, A., Martins, G.J., Paixao, V.B., [Zhou, P.](#), Paninski, L. and Costa, R.M., 2017. The spatiotemporal organization of the striatum encodes action space. *Neuron*, 95(5), pp.1171-1180.
4. Friedrich, J., [Zhou, P.](#) and Paninski, L., 2017. Fast online deconvolution of calcium imaging data. *PLoS computational biology*, 13(3), p.e1005423.
3. [Zhou, P.](#), Burton, S.D., Snyder, A.C., Smith, M.A., Urban, N.N. and Kass, R.E., 2015. Establishing a statistical link between network oscillations and neural synchrony. *PLoS computational biology*, 11(10), p.e1004549.
2. Scott, J.G., Kelly, R.C., Smith, M.A., [Zhou, P.](#) and Kass, R.E., 2015. False discovery rate regression: an application to neural synchrony detection in primary visual cortex. *Journal of the American Statistical Association*, 110(510), pp.459-471.
1. [Zhou, P.](#), Burton, S., Urban, N. and Ermentrout, G.B., 2013. Impact of neuronal heterogeneity on correlated colored noise-induced synchronization. *Frontiers in computational neuroscience*, 7, p.113.

## PREPRINTS [\[Google Scholar\]](#)

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3. Giovannucci, A., Friedrich, J., Gunn, P., Kalfon, J., Koay, S.A., Taxidis, J., Najafi, F., Gauthier, J.L., [Zhou, P.](#), Tank, D.W. and Chklovskii, D.B., 2018. CaImAn: An open source tool for scalable Calcium Imaging data Analysis. *bioRxiv*, p.339564. ([accepted by eLife in 2018.](#))
2. Buchanan, E.K., Kinsella, I., Zhou, D., Zhu, R., [Zhou, P.](#), Gerhard, F., Ferrante, J., Ma, Y., Kim, S., Shaik, M. and Liang, Y., 2018. Penalized matrix decomposition for denoising, compression, and improved demixing of functional imaging data. *bioRxiv*, p.334706.
1. [Zhou, P.](#), Resendez, S.L., Stuber, G.D., Kass, R.E. and Paninski, L., 2015. Efficient and accurate extraction of in vivo calcium signals from microendoscopic video data. *arXiv preprint arXiv:1605.07266\**. ([accepted by eLife in 2018.](#))

## PRESENTATIONS

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4. [MCCS/ICLM workshop](#), Imaging the behaving brain with miniscopes, UCSD, CA 11/17

3. [Computational Tutorial](#): Calcium Imaging Data Cell Extraction, MIT, MA, (07/17)
2. [FACM](#): Optical Imaging Data Analysis, NJIT, NJ, (06/16)
1. [CCNS](#): Workshop on Optical Imaging Data Analysis, SAMSI, NC, (02/16)

## PROFESSIONAL SERVICES

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- Journal reviewer:  
[Scientific Reports](#) (1)  
[Frontiers in Neural Circuits](#) (1)  
[Frontiers in Neuroinformatics](#) (1)
- Conference reviewer:  
[NIPS](#) (2016)  
[Cosyne](#) (2016)

## TEACHING EXPERIENCES

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3. **Machine Learning**  
TA, 2015 Fall, (Lecturer: Seyoung Kim)
2. **Statistical Methods for Neuroscience and Psychology**  
TA, 2014 Spring, (Lecturer: Robert Kass)
1. **undergraduate Program for Neural Computation (uPNC)**  
TA, 2012 & 2013 Summers