Pengcheng Zhou

Postdoctoral research scientist
Columbia University in the City of New York

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CONTACT INFORMATION

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POSITIONS

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

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]

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]

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.

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

3. Computational Tutorial: Calcium Imaging Data Cell Extraction, MIT, MA, (07/17) (invited)

2. FACM:Optical Imaging Data Analysis, NJIT, NJ, (06/16) (invited)

1. CCNS: Workshop on Optical Imaging Data Analysis, SAMSI, NC, (02/16) (invited)

PROFESSIONAL SERVICES

- Journal reviewer:
  Scientific Reports (1)
  Frontiers in Neural Circuits (1)
  Frontiers in Neuroinformatics (1)

- Conference reviewer:
  NIPS (2016)
  Cosyne (2016)

TEACHING EXPERIENCES

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