Yimeng Zhang

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EDUCATION

CARNEGIE MELLON UNIVERSITY

Ph.D. Candidate, Computer Science Dept. and Center for the Neural Basis of Cognition
Aug. 2013–Present | Pittsburgh, PA
Advisor: Tai Sing Lee
Presidential Fellowship in the Life Sciences, 2015–2016

ZHEJIANG UNIVERSITY

B.Eng. in Computer Science
Sep. 2009–Jun. 2013 | Hangzhou, China
GPA: 3.95/4.0 Rank: 1/180

COURSEWORK

GRADUATE

Computer Vision • Convex Optimization • Topics in Deep Learning • Machine Learning • Neural Signal Processing

COURSERA

Digital Signal Processing • Probabilistic Graphical Models • An Introduction to Functional Analysis

PROGRAMMING SKILLS

Proficient
Python • MATLAB
Familiar
C • C++ • Java • R • Shell

TOOLS

PyTorch • Caffe • Theano • TensorFlow • scikit-learn • h5py • pandas • Docker • conda

OPEN SOURCE

I have developed various tools for computational neuroscience, computer vision, data management, lab management, etc. to facilitate research in Lee Lab; I have also made minor contributions to various software projects like PyTorch, pandas, and scikit-learn. See **zym1010.github.io/software**.

BOOK NOTES

I have accumulated a large amount of notes on deep learning, graphical models, image statistics, computational neuroscience, etc. See **zym1010.github.io/notes**.

CAREER GOAL

I am enthusiastic about making AI, ML, and good CS technologies in general available to those less technical customers and businesses. With in-depth knowledge of many AI-related topics and diverse hands-on experience of engineering, I am prepared to be a versatile engineer bridging the gap between AI research in the lab and its effective deployment in the real world.

RESEARCH

My main research interests are using and developing neural network-based models to explain computation mechanisms underlying lower visual areas of primates, as well as general machine learning and computer vision problems.

PUBLICATIONS

1. **Yimeng Zhang**, Tai Sing Lee, Ming Li, Fang Liu, Shiming Tang, "Convolutional neural network models of V1 responses to complex patterns," in *J. of Computational Neuroscience*, 2018.
2. Shiming Tang, **Yimeng Zhang**, Zhihao Li, Ming Li, Fang Liu, Hongfei Jiang, Tai Sing Lee, "Large-scale two-photon imaging revealed super-sparse population codes in the V1 superficial layer of awake monkeys," in *eLife*, 2018.
3. Shiming Tang, Tai Sing Lee, Ming Li, **Yimeng Zhang**, Yue Xu, Fang Liu, Benjamin Teo, Hongfei Jiang, "Complex Pattern Selectivity in Macaque Primary Visual Cortex Revealed by Large-Scale Two-Photon Imaging," in *Current Biology*, 2017.
4. Hao Wang, Xingyu Lin, **Yimeng Zhang**, Tai Sing Lee, "Learning Robust Object Recognition Using Composed Scenes from Generative Models," in *14th Conference on Computer and Robot Vision (CRV)*, 2017.
5. Xingyu Lin, Hao Wang, Zhihao Li, **Yimeng Zhang**, Alan Yuille, Tai Sing Lee, "Transfer of View-manifold Learning to Similarity Perception of Novel Objects," in *5th International Conference on Learning Representations (ICLR)*, 2017.
6. **Yimeng Zhang**, Xiong Li, Jason M. Samonds, Tai Sing Lee, "Relating functional connectivity in V1 neural circuits and 3D natural scenes using Boltzmann machines," in *Vision Research*, 2015.

POSTERS & ABSTRACTS

1. **Yimeng Zhang**, Corentin Massot, Tiancheng Zhi, George Papandreou, Alan Yuille, Tai Sing Lee, "Understanding neural representations in early visual areas using convolutional neural networks," in *Neuroscience (SfN)*, 2016.

EXPERIENCE

PETUUM, INC. | Software Engineer Intern

May 2018–Aug. 2018 | Pittsburgh, PA

- Data wrangling libraries and DevOps utilities

UNIVERSITY OF BRITISH COLUMBIA | Research Intern

Jul. 2012–Oct. 2012 | Vancouver, Canada
Advisor: Rabab Ward

- Application of compressive sensing to EEG signals