

Department of Brain and Cognitive Sciences, University of Rochester, Rochester, NY 14627

Work Experience

Senior Data Scientist Intern, Chief Analytics Office, <i>IBM</i>	May-August 2022
Teaching Assistant & Reviewer, <i>Neuromatch Academy</i>	July 2020, August 2021

Education

PhD, MA, Brain & Cognitive Sciences, Computer Science, <i>University of Rochester</i>	2018-2023 (expected)
MS, Cognitive Neuroscience, <i>East China Normal University</i>	2015-2018
BE, Mechanical Engineering, <i>Tongji University</i>	2011-2015

Skills

Machine Learning & Deep Learning: PyTorch, Scikit-Learn, Tensorflow
Programming: Matlab, Python (numpy, matplotlib, pandas), C++, C#, R, Lisp
Computer Graphics & Virtual Reality: OpenGL, Unity, Unreal Engine, OpenCV
Electrophysiology (extra-cellular recording), Psychophysics, Computational Neuroscience, fMRI

Publications

1. **Xu ZX** & DeAngelis GC. (2022) Neural mechanism for coding depth from motion parallax in area MT: gain modulation or tuning shifts? *Journal of Neuroscience*, 42(7) 1235-1253.
2. Kuai SG, Shan ZKD, Chen J, **Xu ZX**, Li JM, Field D, & Li L. (2020) Integration of motion and form cues for the perception of self-motion in the human brain. *Journal of Neuroscience*, 40(5) 1120-1132.
3. **Xu ZX***, Chen Y*, & Kuai SG. (2018) The human visual system estimates angle features in an internal reference frame: A computational and psychophysical study. *Journal of Vision*, 18(13): 10, 1-11.

Conferences

1. **Xu** & DeAngelis. Contextual influences on the perception of motion and depth. *Cognitive Computational Neuroscience (CCN 2022)*
2. **Xu** & DeAngelis. Interpretation of viewing context alters object motion perception. *Vision Sciences Society Meeting (VSS 2022)*
3. Shivkumar, **Xu**, Lengyel, DeAngelis, & Haefner. Causal inference can explain hierarchical motion perception and is reflected in neural responses in MT. *Computational & Systems Neuroscience (COSYNE 2022)*
4. **Xu** & DeAngelis. Speed tuning in head coordinates as an alternative explanation of depth selectivity from motion parallax in area MT. *Society for Neuroscience (SFN 2019)*
5. Chen, **Xu**, & Kuai. Roles of egocentric and allocentric reference frames in visual search. *Asia-Pacific Conference on Vision (Best Poster Award, APCV & CVSC 2018)*

6. Kuai, **Xu**, Chen, Li, Field, & Li. Cortical areas that integrate motion and form cues for the perception of self-motion. *Vision Sciences Society Meeting (VSS 2018)*
7. **Xu**, Chen, & Kuai. Effect of internal reference on angle perception: Computational models and human psychophysics. *Society for Neuroscience (SFN 2017)*
8. Kuai, **Xu**, Chen, Li, Field, & Li. Neural mechanisms for integrating motion and form cues for the perception of heading during self-motion. *Society for Neuroscience (SFN 2017)*
9. **Xu**, Chen, & Kuai. Effect of internal reference frame on angle perception. *China Vision Science Conference (CVSC 2017)*

Teaching Experience

Neuromatch Academy: Deep Learning (August 2021), Computational Neuroscience (July 2020)

University of Rochester (TA): Sensory & Motor Neuroscience (Fall 2021), Foundations of Cognitive Science (Spring 2020)

Honors and Awards

Travel Award, AS&E Graduate Student Association, *University of Rochester*, 2022

NSF Research Traineeship, Data-Enabled Science and Engineering, *University of Rochester*, 2018-2019

International Travel Grant, *East China Normal University*, 2017

National Graduate Student Scholarship, *East China Normal University*, 2017

Membership and Service

Member, *Society for Neuroscience*, *Vision Sciences Society*

Application Reviewer, *Neuromatch Academy*, *AS&E GSA Travel Grant (University of Rochester)*

Courses

Machine Learning, Machine Vision, Advanced Statistics, Cognitive Neuroscience, Human Brain Anatomy, Perception and Action, Cognition, Behavioral Methods in Cognitive Science, Learning and Memory, Digital Signal Processing, Autonomous Control Theory, Complex Systems and Optimization

Computational and Cognitive Neuroscience Summer School, *New York University Shanghai*, July 2017

IEEE CIS Summer School on Neuromorphic & Cyborg Intelligent Systems, *Zhejiang University*, August 2015

Languages

Chinese (Native), English (Proficient)