

Yiyu Wang

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<https://yiyuwang.github.io/>

EDUCATION

Northeastern University, Boston MA		09/2018 - Pres.
Ph.D., Psychology (expected 2023)	Advisor: Ajay Satpute Ph.D.	
University of Washington, Seattle WA		09/2013 - 06/2017
B.S. Psychology	College Honors, GPA: 3.74/4.0	

RESEARCH EXPERIENCE

Developing Neural Topographic Factor Analysis (NTFA), Northeastern University 09/2018 - Pres.

- Incorporated neural networks and matrix factorization methods to model individual and content variation in fMRI neural activities in Python and PyTorch
- Reduced dimensionality of fMRI time series data with interpretable low-dimensional embeddings
- Added an individual by content interaction embedding to account for both between and within individual variability
- Incorporated clustering methods to determine brain states in the embedding space
- Collaborated with an interdisciplinary team including engineers and neuroscientists

Identifying Neural and Physiological Patterns of Fear, Northeastern University 09/2018 - Pres.

- Developed situation- and individual-dependent models of subjective experiences of fear
- Designed, collected, preprocessed and analyzed fMRI data
- Collected, preprocessed, and analyzed physiological data (ECG, ICG, Respiration, EDA)
- Built neural predictors of fear using PCA, LASSO regression, and multivariate analysis

Modeling social action conceptualization and prediction, Northeastern University 10/2020 - Pres.

- Designed experiment, created the video stimuli, collected fMRI and online data
- Applied Reinforcement Learning models and Hierarchical Gaussian Filters to data

How Motivations Influence Visual Perception, Stanford University 06/2017 - 06/2018

Research Assistant

Principle Investigator: Yuan Chang Leong Ph.D. & Jamil Zaki Ph.D.

- Analyzed behavioral and mouse-tracking data using R and MATLAB
- Fitted different variants of the drift diffusion model to behavioral data

How Familiarity Mitigates Implicit Bias in Social Groups, University of Washington 11/2015 - 06/2017

Research Assistant, Honor Student

Principle Investigator: Anthony Greenwald Ph.D.

- Examined how mental rehearsal mitigate implicit bias towards social groups through familiarity as a potential intervention mechanism.

SKILLS

Language: Python, Bash, MATLAB, R, Java, JavaScript

Framework: PyTorch, TensorFlow, Docker, Singularity

Courses: Deep Learning, Machine Learning, Cognitive Neuroscience, Bayesian Data Analysis, Fundamentals of Programming

PUBLICATIONS

Wang, Y., Kragel, P.A., Satpute, A.B. (under review, bioRxiv) Neural predictors of subjective fear depend on the situation.

Khan, Z.*, **Wang, Y.***, Sennesh, E., Dy J., Ostadabbas, S., van de Meent, J.W., Hutchinson, J.B., & Satpute, A.B. A computational neural model for mapping degenerate neural architectures *Neuroinformatics* (2022) * equal author contributions

Sennesh, E., Khan, Z., **Wang, Y.**, Hutchinson, J.B., Satpute, A.B, Dy, J., & van de Meent, J. W. (2020). Neural topographic factor analysis for fMRI data. *Advances in Neural Information Processing Systems (NeurIPS)*, 33, 12046-12056.

Leong, Y.C., Hughes, B., **Wang, Y.**, & Zaki, J. (2019). Neurocomputational mechanisms underlying motivated seeing. *Nature Human Behavior*, <https://doi.org/10.1038/s41562-019-0637-z>

Selected Conference Posters

Wang, Y., McVeigh, K., Satpute, A.B Dynamic and static non-linear fMRI models have similar performance when predicting subjective fear, *Society for Affective Science 2023 annual meeting*

Wang, Y., Russo, D., Lane, R., Davidow, J,Y, Satpute, A.B. The neural basis of adopting the optimal conceptualization to predict actions. *2022 Social & Affective Neuroscience Society Conference*

Wang, Y., Khan, Z., Sennesh, E., Dy J., van de Meent, J., Hutchinson, J.B., & Satpute, A.B. A Computational Neural Model for Mapping Degenerate Neural Architectures. *2021 BRAIN Initiative Meeting*

Wang, Y., Sambrano, D, Leong, Y.C., Jamil, J. Motivational biases in perceptual judgments: A mouse-tracking study. *2018 APS Annual Convention*

TEACHING EXPERIENCE

Lab in Cognition, Northeastern University	2021
Lab in Social Psychology, Northeastern University	2020
Statistical Inference, University of Washington	2017
Introduction to Statistics, University of Washington	2016

WORKSHOPS

Neuromatch Academy - Deep Learning	2022
Kavli Summer School in Cognitive Neuroscience	2019

HONORS & AWARDS

Kavli Fellowship for Summer Institute in Cognitive Neuroscience	2019
Annual Dean's list, University of Washington	2014 - 2015, 2016 - 2017
College Honors, University of Washington	2017