Yijin Wang

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EDUCATION

American University **Washington DC, American**

PhD candidate in Behavior, Cognition and Neuroscience August 2025 – Present

Major Courses: Computer Vision, Neuroscience as A Profession

Advised by Dr. Bei Xiao

Computational Material Perception Laboratory https://sites.google.com/site/beixiao/

South China Normal University **Guangzhou, China**

MSc in Applied Psychology, School of Psychology September 2022 – July 2025

GPA: 3.70/4.0

Master Thesis: Tool representation under conscious and unconscious condition – evidence from DNN

Major Courses: Study of Advanced Statistics, Academic Writing and Academic Norms, Data analysis and machine learning, MRI Research Technology and Data Processing, ERP Research Technology and Data Processing

Advised by Dr. Juan Chen

Action Perception Learning Lab http://juanchenpsy.scnu.edu.cn/

BSc in Computer Science, School of Computer September 2017 – July 2021

GPA: 3.31/4.0

Bachelor Thesis: Design of intelligent recommendation movie system

Major Courses: Advanced mathematics, Linear algebra, Probability and statistics, Data structure and Algorithms, Advanced Language Programming

PUBLICATIONS

1. **Wang, Y.***, Gao, J.*, Zhu, F., Liu, X., Wang, G., Zhang, Y., Deng, Z., & Chen, J. (2024). Internal representations of the canonical real-world distance of objects. ***Journal of vision***, *24*(2), 14. https://doi.org/10.1167/jov.24.2.14
2. Deng, Z., Li, Z., Gao, J., Zhu, F., **Wang, Y.**, Long, J., Zhang P., Meng, M., Chen, J., Different representation of toolness and the elongated shape of tools revealed by continuous flash suppression and backward masking. (In Prep)
3. **Wang, Y.,** Deng, Z., Zhang, R., Chen, J., Tool representation under unconscious condition – evidence from DNN. (In Prep)
4. Gao, J., **Wang, Y.**, Deng, Z., Li, H., Zhang, R., Zhang, Y., Zhang, X., Zhou, G., Chen, J., Learning by doing: effects of action learning on highly degraded visual stimuli. (Under review)
5. Zhang, Y, Gao, J., Deng, Z., Wang, T., Wang, C, Liu, X., **Wang, Y**, Chen, J., Surround suppression when preparing hand actions provides evidence of sensory planning. (In Prep)

RESEARCH EXPERIENCE

Master Thesis: **Tool representation under unconscious condition – evidence from DNN**

Leader | Advisor: Dr. Juan Chen & Dr. Ru-yuan Zhang *Sept 2022 - Present*

• Compared human EEG data with features extracted from different pretrained deep neural networks (AlexNet, CLIP, etc) via representational similarity analysis.

• Trained different deep neural networks with different kinds of images, and compared human EEG data with features extracted from them.

• Generating images with EEG data under conscious and unconscious condition using generative models.

Published Thesis: Internal representations of the canonical real-world distance of objects

Leader & Author | Advisor: Dr. Juan Chen *Sept 2022 - Jan 2024*

• Designed psychophysics experiments using priming and Stroop paradigms, collected experiment data.

• Analyzed data using ANOVA and Generalized Linear Mixed Model using JASP and R.

Neural dynamics of the processing of visible and invisible tools revealed qualitative differences between conscious and unconscious visual processing

Collaborator | Advisor: Dr. Juan Chen *Sept 2022 - Dec 2022*

• Compared human EEG data with features extracted from different pretrained convolutional neural networks (VGG19, etc) via representational similarity analysis.

Course Project: Predicting ages and sex of participants using features extracted from fMRI

Leader & Designer | Dr. Jingxin Nie *Mar 2023 - Jun 2023*

• Compute functional connection matrix using preprocessed fMRI data.

• Predicted ages using 12 different models including SVM, KNN, Ridge regression.

• Predicted sex using 9 different models including XGB, Random forest, Logistic regression.

• Computed dynamic functional connection matrix and use them to investigate which time points are most predictive of age and gender.

PRESENTATIONS

01/12/2024 **Talk |** ***The 6th China Vision Science Conference（CVSC 2024）***

Tool representation under unconscious condition——Evidence from DNNs

02/11/2024 **Poster |** ***Academic Annual Consciousness Meeting of Chinese Cognition Science Society 2024***

Tool representation under unconscious condition——Evidence from DNNs

25/05/2024 **Poster |** ***Academic Annual Meeting of Chinese Psychological Society 2024***

Representation of shape and toolness of tools under unconscious conditions – Evidence from DCNN

03/08/2023 **Poster |** ***The 5th China Vision Science Conference（CVSC 2023）***

Representation of toolness and elongated shape of tools using DCNN under conscious and unconscious conditions

20/05/2023 **Abstract |** ***Academic Annual Neuroimaging Meeting of Chinese Neuroscience Society 2023***

Internal representations of the canonical real-world distance of objects

PROGRAMMING & SOFTWARE SKILLS

Computer Languages

Python, C++, MATLAB, R, Java, HTML, CSS

Software & Toolbox Experience

M/EEG Data Processing: EEGLAB, fieldtrip, MNE

Statistics: SPSS, JASP, R

Deep Learning: PyTorch

Others: Adobe Illustrator, Origin, etc

Experimental Experience

EEG, Psychophysics

Language

English: fluent (IELTS: 7.5);

Chinese: native;

Japanese: Intermediate

HONORS & AWARDS

06/2025 Outstanding Graduate Student, School of Psychology, South China Normal University

12/2024 Outstanding Paper Nomination Award in CVSC 2024

11/2024 **The First Prize** in “AI for Science” Competition

10/2024 **Chinese National Scholarship**

09/2024 **The First-Class Scholarship**, South China Normal University

09/2023 **The Second-Class Scholarship**, South China Normal University

12/2023 **The Second Prize** in "Challenge Cup" National College Student Curricular Academic Science and Technology Works Competition

09/2022 **The Second-Class Scholarship**, South China Normal University

09/2020 **National Encouragement Scholarship**

09/2019 **National Encouragement Scholarship**

09/2017 **Second-class Outstanding Freshman Scholarship**, South China Normal University