

# Zhidong Zhang

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## EDUCATION

**Wuhan University**, Wuhan, China  
B.Eng. Software Engineering

09/2021 – 06/2025  
GPA: 3.73/4.00 (88.93/100)

**Courses:** Data Structures, Computer Organization, Operating Systems, Machine Learning, Database Systems, Discrete Mathematics, Linear Algebra, Probability & Statistics, Cognitive Psychology, etc.

## RESEARCH EXPERIENCE

### RNN Analysis on Same-Different Task

09/2024 – 11/2024

Chinese University of Hong Kong | Advisor: Dr. Xiangbin Teng

Remote

- **Model Training:** Trained RNNs on the same-different task under varying noise levels by neurogym, optimizing the code for readability and extensibility.
- **Model Analysis:** Analyzed normalized averages and principal components of RNN hidden states, performed linear fitting of activities at different time points to stimuli values, and analyzed the temporal scope.

### Large Model Based Crossmodal Chinese Poetry Creation

07/2024 – 10/2024

Wuhan University | Advisor: Dr. Weiping Zhu

Wuhan, China

- **System Development:** Led the development of modules supporting cross-modal text and image inputs by miniGPT-4 and CLIP, enhancing iterative optimization mechanisms.
- **System Evaluation:** Evaluated poem quality across different input modalities, and the effect of optimization on three poem sets.

### Data Analysis on Forward-Flow Task

04/2024 – 06/2024

Beijing Normal University | Advisor: Prof. Yunzhe Liu

Remote

- **Data Preprocessing:** Pre-processed word data for forward flow tasks, inserting seed words, removing duplicates, and generating embeddings.
- **Correlation Analysis:** Analyzed the correlation between participants' scale scores and statistical indicators, including sequence length, embedding similarity, optimality divergence, semantic distance range, and "forward flow".

## PROJECT EXPERIENCE

### The Working Memory Capacity of RNN models

07/2024 – 08/2024

Computational Neuroscience Program, Neuromatch Academy

- **Memory Decoding:** Built a neural network to decode firing rates into previous inputs, computing correlations to assess the WM capacity of RNN models.
- **Parameter Exploration:** Led the exploration of effects of parameter simulating biological factors and interactions on WM capacity.

## PUBLICATIONS

*\*Equally authorship*

L. Yang\*, Z. Zhang\*, S. Liu, X. Dai, D. Zhou, and D. Cui, "Large Model Based Crossmodal Chinese Poetry Creation", in 2024 IEEE Smart World Congress (SWC), accepted.

## HONORS & AWARDS

2021 Excellent Student Scholarship Third-class Reward (1,000 CNY)  
2021 Excellent Student Cadre  
2021 Advanced Individual of Social Work

## SKILLS

**Data Analysis:** Machine Learning, Deep Learning, EEG processing, Digital signal processing

**Programming:** Python, C/C++

**Tools:** Unix Shell, Git/GitHub, E-prime, Zotero

**Language:** English (IELTS 7.0), Mandarin Chinese (native)