

Zihuan Zhang

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Education

Johns Hopkins University, Aug 2024-May 2028 (expected)

- B.S. Computer Science, B.S. Neuroscience, B. Music. Performance; JHU & Peabody Institute Dual-Degree Program
- Triple majors across 3 schools, avg 10 courses/semester
- Dean's List: all semesters

Experience

Research Assistant, Nov 2025-Present

JHU Social Cognitive Artificial Intelligence Lab, PI: Prof. Tianmin Shu

- Project: Multi-agentic inference of visual LLMs based on human social norm cognition, agentic interaction in benchmark settings
- Skills: benchmark world design and implementation, agentic workflows, training and data processing
- Assessing model's ability to adapt social norms and adjust behavioral output, interaction in simulation settings with theory of mind understanding

Researcher, Apr 2025-Present

JHU Mind Brain Institute, Computational Neuroscience Lab, PI: Prof. Ernst Niebur & Prof. Alfredo Kirkwood

- Project: Computational modelling of neuroplasticity in the perceptual and neural responses to visual stimuli presented with different attention modalities
- Skills: computational neuroscience, neural network modelling, neuronal LIF model, experimental data signal processing
- Building LIF network simulation of mouse V1 neuron dynamics, improved SOTA design from Nature, fine-tuned with wet-lab results

R&D Summer Intern, May 2025-Aug 2025

Chinese Academy of Sciences, Brain Cognition & Disease Institute, Neher Neural Plasticity Lab, PI: Prof. Yingjie Zhu

- Project: software & hardware design of mice experiment device, neural mechanisms of drug & alcohol addiction in mice through operant conditions training
- Skills: embedded systems engineering, hardware PCB & 3D printing design, mice behavioral training & experiments, experimental data signal processing
- Outcome: Chinese National Patent filing in progress.

Research Assistant, Apr 2025-Present

JHU Mysore (Neural Circuits & Computations for Behavior) Lab, PI: Prof. Shreeshe Mysore

- Project: Vocalization of birds and relation with behavioral patterns and cognitive neural circuitry
- Skills: experimental data signal processing, computer vision & machine learning analysis of video & audio data

Researcher, Mar 2023-Aug 2023

Pioneer Academics Program Spring Term, PI: Prof. Ladan Shams (UCLA)

- Paper title: The influence of audio-visual integration on the global-local processing of music in absolute pitch possessors
- Grade: A+, nomination for Pioneer Research Journal publication (top 8.9% among 1400+ program participants)
- Concentration: Psychology/Neuroscience/Biology, peer reviewed within Pioneer community and received college credit (2)

Research Team, Feb 2022-Oct 2022

International Genetically Engineered Machine (iGEM) Competition, Team: Greatbay_SCIE, PI: Dr. Boxiang Wang

- Global Gold in high school track, nomination for Best Sustainable Development Impact and Best New Basic Part
- synthetic fiber/clothing biodegradation, protein & DNA protocols wet-lab, dry-lab structural and mathematical modelling of bioprocesses
- <https://2022.igem.wiki/greatbay-scie/>

Project

Symmetry—Multi-Agents LLM Financial Trading & Market Analysis Framework, Sep 2025

HopHacks JHU Hackathon 2025, Data Visualization Track

- designed and deployed a multi-agent AI trading research platform, inspired by real-world investment desks, driven entirely by 20+ autonomous AI Agents.
- integrated SOTA open-source trading agents, 2x larger new analysis pipelines, in-depth debate modules, strategic information ingestion, versatile output
- Tools & Frameworks: LangChain, Flask, React, Tailwind
- <https://github.com/0010SS/symmetry>

Skill

- Coding: Python, MATLAB, C++/C (Arduino), Java, JS, HTML, CSS
- OOP, signal processing, machine/deep learning, embedded systems, LLM & VLM, computational neuroscience
- Protein engineering & biochemical wet-lab—protein & genetic engineering, Benchling, SnapGene, PyMOL, AlphaFold, NUPACK
- Animal subject wet-lab—mice & owls experiment protocols
- Experimental data analysis, research statistical graphing and presentation—MATLAB, Prism, BioRender