

Shaoyang Cui(Joey)

Department of Psychological and Cognitive Sciences
Tsinghua University
✉ JoeyCui2024@163.com
🌐 Self-page

+86-15900329726
🌐 GitHub Profile

EDUCATION

- Bachelor of Engineering in Artificial Intelligence** Sep 2021 - Jul 2025
Yuanpei College, Peking University
Overall Grade: 86/100 | **GPA:** 3.52/4.0
*Member of the **Tong Class**, an honorary pilot program specializing in AI at Peking University.*

RESEARCH INTERESTS

My research interests lie at the intersection of Artificial Intelligence and Neuroscience. I aim to leverage AI to decode the brain’s structural and functional complexity through a bi-directional approach: from a bottom-up perspective, modeling neurons as fundamental computational units; and from a top-down perspective, analyzing macro-scale brain dynamics using neuroimaging techniques (e.g., MRI, EEG). By bridging these scales, I hope to unravel the neural substrates of intelligence and contribute to computational therapeutics for neurological disorders.

RESEARCH EXPERIENCE

- Research Assistant, Brain-Inspired Algorithmic Modeling Lab** Jul 2025 – Present
Department of Psychological and Cognitive Sciences, Tsinghua University
- Research Intern, Computational Neuroscience Team (PI: Dr. Kai Du)** Jul 2023 – Jul 2025
Institute for Artificial Intelligence, Peking University

PUBLICATION

- Task Ability Decomposition and Difficulty Quantification for AGI Evaluation** Mar 2024 - Jul 2025
Cui, S. Y., He, X. Y., Han, J. H., Zhang, Z. L., & Peng, Y. J.
 - * **Science China Technological Sciences (JCR Q1)**. Full title available upon request.
 - * First to explore the structure of task-ability space and its link to task difficulty.
 - * Proposed TADDL-V: a framework for quantifying difficulty of visual tasks to support AGI evaluation.
 - * Released AGI-V70: a curated benchmark set for testing diverse visual abilities. See GitHub.

PROJECTS

- * **Implicit Theory of Mind in LLM Agents’ Decision Making.** Jan 2024 –Present
Collaborative Research Project, supervised by Dr.Junqi Wang and Dr.Lifeng Fan
 - Designed and developed **TradeCraft**, a large-scale multi-agent benchmark integrating planning and social reasoning modules to assess the functional utility of Theory-of-Mind in strategic decision-making.
 - Manuscript **under review at ICLR 2026**.
- * **Possible Models of Self-Awareness in Conscious Turing Machines** Sep 2022 - Dec 2022
Supervised by Prof. Lenore Blum(CMU) and Prof.Manuel Blum(CMU)
 - Based on the previous works of Conscious Turing machine(CTM), discussed the consciousness and self-consciousness of a CTM, gave a clear definition.
 - **Invited to present at the IJTCS2023 workshop.**
- * **FAB: Factory of Abstract-style Benchmark** Nov 2024 –May 2025
Independent Project
 - Developed the first fully automated, low-cost benchmark generation framework for abstract-style evaluation across multipul academic fields.
 - Open-source benchmark available on GitHub: FAB Benchmark Repository.

ON-CAMPUS

- *
Champion, 2nd AI Cup Badminton Tournament, Institute for AI, Peking University Jun 2025
- *
Team Manager and Coach: Women’s Football Team,Yuanpei College Oct 2022 - Jun 2024
- *
Member of the Tennis Team,Yuanpei College Oct 2022 - Jul 2025

AWARDS

- *
IJCAI 2022–2023 Special Track: Chinese Standard Mahjong AI Competition Jun 2022 –Jun 2023
Peking University, under the supervision of Prof. Wenxin Li
 - Achieved **10th place** in **IJCAI 2022** and **7th place** in **IJCAI 2023**, invited to present at the **IJCAI 2023 Special Track**.
 - Competition details available at official game page.

PERSONAL QUALITIES

IELTS: 7.5
Technical Skills: Proficient in PyTorch, NEURON as well as development tools like Git and GitHub.