Hanbo Xie

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https://xhb120633.github.io/

EDUCATION

03/25-Now **Princeton University** **Princeton, New Jersey, US**

Visiting Student Research Collaborator

- Supervisor: Tom Griffiths

08/24-Now **Georgia Institute of Technology** **Atlanta, Georgia, US**

Ph.D. in Psychology

- Supervisor: Robert Wilson

Minor in Computer Science

08/22-05/24 **the University of Arizona** **Tucson, Arizona, US**

M.A of Psychology

- Supervisor: Robert Wilson

09/15-06/19 **the Southwestern University of Finance and Economics** **Chengdu, China**

Bachelor of Management

- Major: Human Resource Management

EMPLOYMENT

08/24-Now **Georgia Institute of Technology** **Atlanta, Georgia, US**

Graduate Assistant

08/22-08/24 **the University of Arizona** **Tucson, Arizona, US**

Teaching Assistant for:

- Introduction to Psychology, Personality, Research Methods, Judgment and Decision-Making

07/22-08/22 **NeuroMatch Academy Summer School 2022** **Global Virtually**

Project Teaching Assistant

- Three-week Computational Neuroscience supervision on projects of 8 groups.

07/19-07/22 **School of Psychological and Cognitive Sciences, Peking University** **Beijing, China**

Research Assistant in Zhou Lab

- Assisted a *Nature Science Foundation* project research (data collection, coding, data analysis, manuscript writing)
- Lead an independent research project.

PUBLICATION

* Denotes equal contribution, † Denotes Correspondence, Underscore denotes mentee

Journal Articles:

Qiu, S., Tang, Y., Yu, H., **Xie, H.**, Dreher, J. C., Hu, Y., & Zhou, X. (2025). Toward a computational understanding of bribe‐taking behavior. *Annals of the New York Academy of Sciences.*

Fang, Z., Zhao, M., Xu, T., Li, Y., **Xie, H.**, Quan, P., ... & Zhang, R. Y. (2024). Individuals with anxiety and depression use atypical decision strategies in an uncertain world. *eLife*, 13.

Xie, H. (2023). The promising future of cognitive science and artificial intelligence. *Nat Rev Psychology*.

Conference:

Pan, L.*, **Xie, H***†., & Wilson, R. C. (2025). Large Language Models Think Too Fast To Explore Effectively. arXiv preprint arXiv:2501.18009. Neurips 2025 Poster.

Zhang, Z.*, **Xie, H***., Baker, T., Peters, M., & Wilson, R. C. (2025). Linking strategies to think aloud in a stochastic learning task. *In Proceedings of the Annual Meeting of the Cognitive Science Society*.

Xie, H., Xiong, H., & Wilson, R. C. (2024) From Strategic Narratives to Code-Like Cognitive Models: An LLM-Based Approach in A Sorting Task. *First Conference on Language Modeling (COLM).*

Xie, H., Xiong, H., & Wilson, R. C. (2024) Evaluating Predictive Performance and Learning Efficiency of Large Language Models with Think Aloud in Risky Decision Making. *Computational Cognitive Neuroscience (CCN), MIT.*

Xie, H., Xiong, H., & Wilson, R. C. (2023). Text2Decision: Decoding Latent Variables in Risky Decision Making from Think Aloud Text. *NeurIPS 2023 AI for Science Workshop*.

Xie, H., Xiong, H., & Wilson, R. C. (2023). Computational introspection: Can large language models reveal cognitive algorithms from human language? Poster session presented at the *5th Chinese Computational and Cognitive Neuroscience Conference*, Beijing, China.

Guo, Y., Song, S., **Xie, H.**, Gao, X., & Zhang, J. (2022, February). ARIMA and RNN for Selection Sequences Prediction in Iowa Gambling Task. In *2022 2nd International Conference on Artificial Intelligence and Signal Processing (AISP)* (pp. 1-6). IEEE.

Song, S*., **Xie, H*.**, Speekenbrink, M., Zhang, J., Gao, X., & Zhou, X. (2020, October). The computational basis of individuals' learning under uncertainty in groups with collective goals. Oral presentation at the Society for Neuroeconomics, Vancouver, Canada.

Preprints and Submitted Works:

Zhu, J.-Q.*, **Xie, H*,** Arumugam, D., Wilson, R. C., & Griffiths, T. L. (2025). *Using reinforcement learning to train large language models to explain human decisions.* arXiv preprint arXiv: arXiv:2505.11614 *(Submitted).*

Xie, H., & Zhu, J*. (2025, July 12). Centaur May Have Learned a Shortcut that Explains Away Psychological Tasks. https://doi.org/10.31234/osf.io/u7z4t_v1 *(submitted).*

Xie, H†., Xiong, H. D., & Wilson, R. C. (2025) Rethinking Think-Aloud in the Age of Language Models. PsyArXiv. https://osf.io/preprints/psyarxiv/6ta3z_v1 *(submitted)*

FUNDING & GRANTS

- OpenAI Researcher Access Program (2024-2025) "What does think aloud reveal on human cognitive process?" ($5,000)

CONTESTS & AWARDS

- The 1st Chinese Computational Psychiatry Hack : **The Champion Team**
- Better Together Psychology Conference: **Best Flash Talk Award**

LECTURES & INVITED TALKS

- **Understanding Human Thoughts from Think Aloud: An LLM Approach (Invited Talks)**
  Invited by Fudan Institute of Science and Technology for Brain-Inspired Intelligence (Lab PI: Dr. Tianye Jia), School of Psychological and Cognitive Sciences, East Normal University (Lab PI: Dr. Xiaolin Zhou), Institute of Neuroscience, CAS (Lab PI: Dr. Tianming Yang), School of Psychological and Cognitive Sciences, Peking University (Lab PI: Dr. Hang Zhang). (May - June, 2024).
- **From Behavior to Minds: An Overview of Computational Modeling in Psychology (Invited talk)**
  Invited by Research Methods Community (Jan, 2024).
- **Forging the Future: Uniting AI and Cognitive Science through Large Language Models (Invited talk)**
  Invited by School of Psychological and Cognitive Sciences, East Normal University (May, 2023).
- **Computational Modeling Basics and Implementations in Stan. (Invited talk)**
  Invited by Institute of Applied Psychology in Tianjin University (Sep, 20, 2021, codes and slides available on GitHub)
- **Reinforcement learning in computational cognitive sciences. (Lecture)**

Video available at: Reinforcement Learning Modeling Club 1 bilibili (in Chinese, codes and slides available on GitHub)

COMMUNITY

- 07/2023: Co-Founder of MindRL Hub (https://rldmjc.github.io/) (A global community for Reinforcement Learning scholars from Psychology, Neuroscience and AI)
- 2022 Fall: Mentor in ASFP (for graduate applications mentoring)
- 2022 Fall: Mentor in PRP (for mentoring undergraduate and master students to do research)

SKILLS

- Programming Skills: Matlab (Psychtoolbox, MLE modeling, VBA toolbox), R(Visualization, RStan), Python (NumPy, psychoPy, PyTorch), JavaScript (JSPsych), CSS, Markdown, LaTex
- Analytical Skills: Statistical analysis, Computational Modeling(non-Bayesian and Bayesian Modeling，machine learning tools, Neural Networks, fMRI data analysis, Large Language Models(distributed training/inference, mechanism analysis).

AD-HOC REBIEWS

- Journals: *AMPPS*, *Computational Psychiatry, Scientific Reports*
- Conferences: *AAAI*, *Annual Meetings of Cognitive Sciences (CogSci)*, *Computational Cognitive Neuroscience (CCN), COLM, ICML, ICLR, NeurIPS*