Chupei Wang

He/him

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Language: Chinese, English, and intro level of Japanese.

EDUCATION

University of Virginia
B.A. in Physics
Charlottesville, USA | 2013 – 2022
(with leave for entrepreneurship, 2016–2018)

EDUCATIONAL ACTIVITIES (Chronological Order)

- **2013–2014**: Mathematics studies, Department of Mathematics, University of Virginia, (Charlottesville, USA)
- **Mar 2015 – Sept 2015**: Linguistics exchange, School of International Liberal Studies, Waseda University, (Tokyo, Japan.)
- **Sept 2015 – Sept 2016**: Comparative Philosophy and Chinese Philosophy, Visiting Student, University of Chicago Divinity School(Chicago USA)
- **2016–2018**: Gap years: Start-up work (full-time leave from studies), Project Manager at Shenzhen YiTing Technology Co., Ltd.
- **2018–2022**: Completed Degree in Physics, University of Virginia (Charlottesville, USA)

Postgraduate Activity:

- Admitted to M.A. in Philosophy of Physics, University of Bristol, UK (2024, not enrolled)
- **Dec 2024–Present**: Independent research on LLM cognition, leading to accepted ICML 2025 workshop paper (Hangzhou, China.)

Academic Activity

1. Cognitive Study on LLMs

Independent Project, in collaboration with NYU Shanghai
Dec 2024 – Present

- Initiated and led a study on cognitive measurement of large language model (LLMs), including project conception, literature review, and experimental design.

- Collaborated with a fifth-year PhD student from NYU Neuroscience Center as an equal-contribution collaborator.
- Designed and conducted preliminary tests, iteratively refined experimental methodology and paper writing.
- First author and corresponding author of a paper accepted at the ICML 2025 Workshop on Long Reasoning Models
- Gained experience in independent research, experimental design, and collaboration.

2. Seminar member of Chinese philosophy and comparative philosophy. Divinity school University of Chicago. Professor Brook Ziporyn: book drafting of ancient Chinese philosophy-"Zhuangzi"

and participated in the seminar of philosophy of religion: Tiantai Buddhism.

2015 Jan.-2015 March. Onsite

2015. Sept-2016 Sept. Onsite

2022.9-2023 Onsite & Remote

3. Fieldwork in Japanese Rural area to know their culture and society, including local political and religious affairs. Lived with a local Japanese family for 6 months at Saitama Ken. (Saitama, Japan)

2015 March- 2015 Sept.

PROFESSIONAL EXPERIENCE

Project Manager
Shenzhen YiTing Technology Co., Ltd. | Shenzhen, China
Sept 2016 – Aug 2018 Full-time, onsite

- Co-founded and managed one of China's first web platforms for music composition and IP trading, collaborating with US-based science students
- Led collaboration with Shanghai Youzu Network for the first animated adaptation of "The Three-Body Problem", responsible for sound production; series achieved 120 million views on Bilibili
- Managed day-to-day operations across music composition and web development departments; facilitated weekly performance reviews and inter-departmental meetings
- Served over 300 enterprises, including Himalaya and Tencent Video
- **Product manager for web collaboration platform** for composers, supporting global remote work during the Covid-19 pandemic; platform remains in use

- The platform is tested to be fully functional and supports the global composer team during the Covid-19 period and is still in use until today.

Profile
With a strong interdisciplinary background spanning both foundational theory in the humanities and rigorous training in the natural sciences, I am deeply committed to integrating diverse academic perspectives in research. My experience includes independent and collaborative research, seminar presentations, and project management across multicultural teams. I excel at synthesizing complex theoretical and empirical insights, communicating findings clearly, and building consensus among collaborators from varied disciplines. My motivation is to bridge conceptual and methodological divides, contribute creative solutions to research challenges, and support effective teamwork in dynamic, international lab environments.om varied backgrounds and collaborate.

Why approach LLMs from a **cognitive-science** angle?

I had a year-long work experience as a product manager back in college, during which I spent many hours clarifying specs with part time programmers from AWS and Microsoft. When I tried the same **communication techniques** with LLMs earlier this year, the conversation felt completely different: the models delivered fluent code snippets but **failed at some context-aware reasoning that human engineers handle almost automatically.** That **discrepancy convinced** me there must be a deeper, cognitively grounded limit at play.

In January 2025, I began investigating this problem through the lens of working memory. After several rounds of trial, error, and feedback from my collaborator, I started thinking there might be a representational capacity limit for transformers and realized that a proactive interference (PI) paradigm from cognitive science might more directly reveal their bottleneck. During the experiment, I invited Jiaqiu Sun, a fifth-year neuroscience PhD at NYU, to join the project. Jiaqiu was in charge of formal data collection after I completed the trial testing, and in preparing our paper for the ICML workshop, I handled the writing while he created the figures and captions. In the earlier stages, Jiaqiu also helped tremendously by speeding up the trial-feedback loop.