SHANGLIN(JASON) WU

✉ jasonwu1017@gmail.com　👤 shanglinwu.github.io

Education

Emory University, Computer Science **August 2025 – Now**
Ph.D. in Computer Science and Informatics *Atlanta, USA*

Peking University, Tong Class **September 2021 – May 2025**
Bachelor of Artificial Intelligence, Computer Science *Beijing, China*

Presentation

A possible mechanism for CTM generating self-consciousness **August 2023**
International Joint Conference on Theoretical Computer Science *Macau, China*

Research Experience

Automated Knowledge Graph Generation for LLMs **September 2024 – Present**
Beijing Institute for General Artificial Intelligence (BIGAI) *Beijing, China*

- Architected an algorithm for automated extraction and construction of Knowledge Graphs (KGs) from Large Language Models' internal knowledge base.
- Engineered an end-to-end pipeline that transforms natural language queries into structured knowledge representations with high accuracy.
- Demonstrated an improvement in complex QA tasks by integrating generated KGs with existing language models.

Mechanisms of Chain-of-Thought Distillation **July 2024 – September 2024**
Chen's Information Language and Intelligence (Chili) Lab, Rice University *Houston, Texas*

- Conducted independent research investigating knowledge transfer mechanisms in Chain-of-Thought (CoT) distillation for large language models.
- Created CounterCoTQA, a novel counterfactual reasoning dataset extending ProntoQA, to measure multi-hop reasoning capabilities.
- Developed metrics to quantify reasoning ability transfer during model distillation using CounterCoTQA benchmarks.
- Analyzed performance patterns of current CoT distillation methods across multiple datasets, revealing limitations in complex deductive reasoning tasks.
- Demonstrated that CoT distillation primarily activates latent knowledge rather than transferring new reasoning capabilities between models.

Self-Consciousness Generation in a Conscious Turing Machine **August 2023**
Peking University *Beijing, China*

- Developed a theoretical framework for modeling self-consciousness in Conscious Turing Machines (CTM) under the mentorship of Professors Manuel and Lenore Blum (CMU).
- Formalized definitions for consciousness states in CTM and proposed a novel mechanism for emergent self-awareness in computational systems.
- Validated the theoretical model through simulation of complex psychological disorders, providing explanations for dissociative phenomena.
- Presented findings at the International Joint Conference on Theoretical Computer Science 2023.
- Extended classical CTM theory with new axioms for self-referential awareness and introspective computation.

Wireless Light Control System **December 2022 – March 2023**
Comparative Cognition Lab (CCL), University of California San Diego *San Diego, California*

- Developed a custom Arduino-based wireless control system for automated environmental light management in animal research.
- Implemented robust hardware featuring waterproofing, heat-resistant enclosure (up to 70℃), and fail-safe mechanisms.
- Engineered low-power optimization achieving 3+ weeks of continuous operation on battery power.
- Successfully deployed and maintained the system at a wildlife sanctuary, enabling 24/7 automated data collection for behavioral studies.
- Designed modular architecture allowing easy maintenance and future expansions of the control system.

Work Experience

Research Intern   **June 2023 – September 2023**

Beijing Institute for General Artificial Intelligence (BIGAI)   *Beijing, China*

- Contributed to the development of CivRealm, a novel multi-agent environment based on the Civilization game for research in strategic decision-making and agent cooperation.
- Extracted and processed game mechanics, states, and action spaces for the environment development.
- Architected a hierarchical multi-agent system utilizing LLMs for strategic planning and tactical execution across multiple decision-making levels.
- Our team's groundbreaking findings were accepted for presentation at the esteemed ICLR 2024.

Product Manager Intern   **June 2022 – September 2022**

Digital Media Center, People's Daily   *Beijing, China*

- Contributed to the design and development of an innovative PUGC (Professional User Generated Content) platform.
- Enhanced the design of advanced features such as an AI video editing toolkit, Non-Fungible Token (NFT) marketplace, and interactive modules.
- Coordinated cross-functional teams of designers, engineers, and content creators to deliver platform features on schedule and within budget.
- The PUGC product was successfully launched, achieving 4.02M downloads by the end of 2023

Awards

Research Competition Paper Award   **December 2023**

The National Conference on Supply Chain and Operation Management(ISCOM) 2023

Scholarship   **December 2021**

Peking University Freshman Scholarship