

# XINHE SHI

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## Education

### Zhejiang University

Sep. 2021 – Present

*Bachelor of Computer Science and Technology*

*Hangzhou, China*

- GPA: 3.97/4.0 (91.30/100)
- Main Courses: Computer Networks(98), Technology of Multimedia(98), Operating System(95), Numeric Analysis(100), Fundamentals of Data Structure(99), Digital Logic Design(97), Discrete Mathematics and Application(95), etc

## Research Interest

Large language models, Multilingual NLP, Multi-Modality

## Manuscripts

[1] **Xinhe Shi**, Linchao Zhu. LLM-based Language Similarity. (In submission)

## Research Experience

### Institute of Artificial Intelligence

November 2023 – Present

*Research intern, supervised by Prof. Linchao Zhu*

- **Language Similarity Analysis from the Perspective of LLMs**
    - \* Proposed and formalized the novel research problem of **LLM-based language similarity**, aiming to provide multilingual NLP researchers with a **reliable language selection strategy** while challenging traditional linguistic classification paradigms
    - \* Designed **dual-methodological framework** combining visualization techniques and quantitative metrics to analyze language similarity through the lens of both LLM task performance pattern and cross-lingual knowledge transfer efficiency
    - \* Discovered LLM-derived language similarity patterns which show partial alignment with traditional linguistic typology (e.g., Slavic language clustering) alongside novel LLM-specific patterns (e.g., Chinese-Greek affinity)
    - \* Identified the super-additive transfer effect where fine-tuning on a specific language provides a more effective "bridge" for knowledge transfer than direct fine-tuning on the target language
  - **M4CQ Dataset Construction & Multilingual Evaluation**
    - \* Constructed a Massive Multilingual Multitask Multiple Choice Question (**M4CQ**) dataset featuring content consistency across **31** languages and domain-balanced distribution of **135** tasks
    - \* (Ongoing) Conducting comprehensive evaluations of multiple LLMs on M4CQ to analyze their multilingual capability
- (The dataset will be released after the evaluations have been done)

## Honors & Scholarships

- **Outstanding Graduate of Zhejiang University**
- **Zhejiang Provincial Scholarship**
- **Zhejiang University Scholarship - First Prize** (Top 3% in Zhejiang University)
- Outstanding Student of Zhejiang University
- CKC Honors College Top Students Scholarship - First Prize
- Academic Excellence Award of Zhejiang University

## Extracurriculars

- **Zhejiang University Five-Star Volunteer** (Highest Volunteer Title at Zhejiang University)  
Completed 300+ volunteer hours in hospital, community, and campus outreach programs
- **Varsity Kayaking Athlete**  
Competed in 4 national-level tournaments as a core member for Zhejiang University
- **21st National Extreme Sports Competition**  
4th place in Non-Motorized Canoe
- **6th National Collegiate Canoe Championships**  
3rd place in Women's Kayak 500m Final(B)
- **The "End of the River" China Grand Canal World Heritage Dragon Boat Competition** (National Competition)  
7th place
- Zhejiang University Knowledge-Driven Orienteering Competition  
2nd place (University-wide)
- Sanhao Cup Orienteering (University Championships)  
8th place in Women's Standard Distance
- Sanhao Cup Table Tennis (University Championships)  
3rd place in Women's Doubles