Bohou Zhang

+86-17663505396 | zbhustc@mail.ustc.edu.cn | yiwencheung

Member of AGI Research Group of RAG, State Key Laboratory of Cognitive Intelligence

Hefei, Anhui - 230021, China

Education

- **University of Science and Technology of China** *2022.8 - Present*
  B.S. in Computer Science, member of Hua Xia Talent Program in Computer Science and Technology Hefei, Anhui
  - GPA: 3.59/4.30
  - Major GPA: 3.89/4.30

Research Experience

- **Scientific Literature Summarization Based on GraphRAG and Self-Reflective LLM** *Sep 2024 - Present*
  Advisor: Prof. Mingyue Cheng
  - Leveraged GraphRAG's automatic knowledge graph construction with semantic chunking and relationship mining.
  - Engineered multi-stage reflection mechanism with fact-checking and relevance assessment modules, reducing factual errors and unproper statements.

- **Optimal Subset Selection Problem in Computerized Adaptive Testing (CAT)** *Nov 2023 - Nov 2024*
  Advisor: Prof. Qi Liu
  - Proposed differentiable approximation framework for discrete item selection.
  - Implemented PyTorch-based selector supporting adaptive stopping criteria.
  - Validated on 3 large dataset with 40K+ examinee response patterns, getting 3-5 percentage point increase compared to baseline.

- **Systematic Review on Indexing Architectures in RAG Systems (50+ Papers Analyzed)** *Oct 2024 - Jan 2025*
  Advisor: Prof. Mingyue Cheng
  - Systematized the indexing system in RAG in terms of creation, maintenance, and storage.

- **Rust-based Real-Time OS Reconstruction for IoT Devices** *Mar 2024 - July 2024*
  Advisor: Prof. Kai Xing [ ]
  - Reengineered LiteOS kernel components with Rust's ownership model.
  - Designed hybrid memory allocator supporting both static and dynamic allocations.
  - Implemented cross-compilation of Rust with C using the FFI mechanism.

Publications

[S.1] Yan Zhuang, Qi Liu, Junhao Yu, **Bohou Zhang**, Zhenya Huang, Zachary A.Pardos, Jinze Wu, Enhong Chen (2024). **Adaptive Testing via Gradient-Matching Subset Selection**. *Manuscript submitted for publication* in *IEEE Transactions on Knowledge and Data Engineering*. ◇ Under peer review since December 2024.

Honors and Awards

- **Outstanding Student Scholarship** *2024*
  University of Science and Technology of China [ ]
- **Outstanding Campers of Kunpeng & Shengteng AI Summer Camp(First Place)** *2024*
  Hangzhou Research Institute of HuaWei Technologies Co., Ltd [ ]
- **Outstanding Student Scholarship** *2023*
  University of Science and Technology of China [ ]

Skills

- **Programming Languages:** C/C++, Python, Java, Rust, VerilogHDL
- **Web Technologies:** HTML5, CSS, JavaScript, TCP/IP
- **Data Science & Machine Learning:** Pytorch, Huggingface Transformers, LangChain
- **English Proficiency:** CET-4 - 636/710, CET-6 - 590/710, able to read/write academic literature