# YIHENG SHU (舒意恒)

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### **EDUCATION**

Ph.D. Student in Computer Science, The Ohio State University

Columbus, OH, Aug. 2023 - Now

Advised by Prof. Yu Su, OSU NLP Group

Master in Computer Technology, Nanjing University

Nanjing, China, Sep. 2020 - Jun. 2023

Advised by Prof. Yuzhong Qu, Websoft Research Group

GPA: 90.96 / 100

Bachelor in Software Engineering, Northeastern University

Shenyang, China, Sep. 2016 - Jun. 2020

Advised by Prof. Guibing Guo and Prof. Gang Wu.

GPA: 4.1073 / 5.0, top 1.7%

### WORK EXPERIENCES

Research Intern, Intuit

Mountain View, CA, May 2025 - Aug. 2025

Full-time, Research Team

Research Intern, Microsoft Research Asia

Beijing, China, Feb. 2022 - Feb. 2023

Full-time, Knowledge Computing Group

## RESEARCH INTERESTS

My research explores retrieval-augmented generation (RAG) and advanced language systems. Specifically, I focus on:

- 1) developing efficient information retrieval approaches to enhance reasoning and long-term memory capabilities, and
- 2) integrating these models with complex external environments such as the Web, knowledge graphs, and databases.

### **PUBLICATIONS**

11. From RAG to Memory: Non-Parametric Continual Learning for Large Language Models

[ICML'25] Bernal Jiménez Gutiérrez\*, Yiheng Shu\*, Weijian Qi, Sizhe Zhou, Yu Su (\*: Equal Contribution)

10. Navigating the Digital World as Humans Do: Universal Visual Grounding for GUI Agents

[ICLR'25] Boyu Gou, Ruohan Wang, Boyuan Zheng, Yanan Xie, Cheng Chang, Yiheng Shu, Huan Sun, Yu Su

9. HippoRAG: Neurobiologically Inspired Long-Term Memory for Large Language Models (GitHub stars >1.4k)

[NeurIPS'24] Bernal Jiménez Gutiérrez, Yiheng Shu, Yu Gu, Michihiro Yasunaga, Yu Su

8. Middleware for LLMs: Tools Are Instrumental for Language Agents in Complex Environments

[EMNLP'24] Yu Gu, **Yiheng Shu**, Hao Yu, Xiao Liu, Yuxiao Dong, Jie Tang, Jayanth Srinivasa, Hugo Latapie, Yu Su

- 7. Distribution Shifts Are Bottlenecks: Extensive Evaluation for Grounding Language Models to Knowledge Bases [EACL'24 SRW] Yiheng Shu, Zhiwei Yu
- 6. Question Decomposition Tree for Answering Complex Questions over Knowledge Bases

[AAAI'23] Xiang Huang, Sitao Cheng, Yiheng Shu, Yuheng Bao, Yuzhong Qu

5. TIARA: Multi-grained Retrieval for Robust Question Answering over Large Knowledge Base

[EMNLP'22] Yiheng Shu, Zhiwei Yu, Yuhan Li, Börje F. Karlsson, Tingting Ma, Yuzhong Qu, Chin-Yew Lin

4. Logical Form Generation via Multi-task Learning for Complex Question Answering over Knowledge Bases

[COLING'22] Xixin Hu, Xuan Wu, Yiheng Shu, Yuzhong Qu

- 3. EDG-based Question Decomposition for Complex Question Answering over Knowledge Bases [ISWC'21] Xixin Hu, **Yiheng Shu**, Xiang Huang, Yuzhong Qu
- 2. Deep Learning for Sequential Recommendation: Algorithms, Influential Factors, and Evaluations [TOIS'20] Hui Fang, Danning Zhang, Yiheng Shu, Guibing Guo
- 1. Deep Learning-based Sequential Recommender Systems: Concepts, Algorithms, and Evaluations [ICWE'19 tutorial] Hui Fang, Danning Zhang, Guibing Guo, Yiheng Shu

# SELECTED HONORS & AWARDS

First-class Yingcai Scholarship, Nanjing University	2022
First-class Academic Scholarship for Master Students, Nanjing University	2020 - 2022
Provincial Excellent Graduates (top 3%), Education Department of Liaoning Province	2020
Meritorious Winner in MCM/ICM (international top 7%), COMAP	2019
Suzhou Industrial Park Scholarship(top 5%), Northeastern University (China)	2019
Pacemaker to Outstanding Student (top 1%), Northeastern University (China)	2018
National Scholarship (top 3%), Ministry of Education of the P.R. China	2018

# **SERVICES**

Conference reviewer: ARR 2025, ARR 2024, WiNLP 2024

Journal reviewer: IEEE Trans. Big Data

Last modified: June 2025