

# YIHENG SHU (舒意恒)

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## EDUCATION & EXPERIENCE

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**Ph.D. Student in Computer Science**, The Ohio State University  
Advised by Prof. Yu Su, OSU NLP Group

*Columbus, OH, Aug. 2023 - Now*

**Master in Computer Technology**, Nanjing University  
Advised by Prof. Yuzhong Qu, Websoft Research Group

*Nanjing, China, Sep. 2020 - Jun. 2023*  
GPA: 90.96 / 100

**Bachelor in Software Engineering**, Northeastern University  
Advised by Prof. Guibing Guo and Prof. Gang Wu.

*Shenyang, China, Sep. 2016 - Jun. 2020*  
GPA: 4.1073 / 5.0, top 1.7%

**Full-time Research Intern**, Microsoft Research Asia  
Advised by Researcher Zhiwei Yu, Knowledge Computing Group

*Beijing, China, Feb. 2022 - Feb. 2023*

## RESEARCH INTERESTS

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My research interests focus on language agents and retrieval-augmented generation (RAG), specifically: 1) grounding large language models (LLMs) in real-world environments such as the Web, knowledge graphs, and databases, and 2) designing efficient retrieval mechanisms to enhance LLMs' reasoning and decision-making capabilities. I'm interested in how RAG frameworks can improve long-term memory for LLMs and their applications in complex, dynamic environments.

## PUBLICATIONS

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9. [HippoRAG: Neurobiologically Inspired Long-Term Memory for Large Language Models](#)

[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

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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

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Conference reviewer: ARR 2024 (ACL 2024, EMNLP 2024, NAACL 2025), WiNLP 2024  
Journal reviewer: IEEE Trans. Big Data

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