

# YIHENG SHU (舒意恒)

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## EDUCATION

<b>Ph.D. Student in Computer Science</b> , The Ohio State University Advised by Prof. Yu Su, OSU NLP Group	<i>Columbus, OH, Aug. 2023 - Now</i>
<b>Master in Computer Technology</b> , Nanjing University Advised by Prof. Yuzhong Qu, Websoft Research Group	<i>Nanjing, China, Sep. 2020 - Jun. 2023</i> GPA: 90.96 / 100
<b>Bachelor in Software Engineering</b> , Northeastern University Advised by Prof. Guibing Guo and Prof. Gang Wu.	<i>Shenyang, China, Sep. 2016 - Jun. 2020</i> GPA: 4.1073 / 5.0, top 1.7%

## WORK EXPERIENCES

<b>Research Intern</b> , Intuit Full-time, Research Team	<i>Mountain View, CA, May 2025 - Aug. 2025</i>
<b>Research Intern</b> , Microsoft Research Asia Full-time, Knowledge Computing Group	<i>Beijing, China, Feb. 2022 - Feb. 2023</i>

## RESEARCH INTERESTS

My research explores retrieval-augmented generation (RAG) and memory for language agents. 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

### 13. REMem: Reasoning with Episodic Memory in Language Agent

[ICLR'26] **Yiheng Shu**, Saisri Padmaja Jonnalagedda, Xiang Gao, Bernal Jiménez Gutiérrez, Weijian Qi, Kamalika Das, Huan Sun, Yu Su

### 12. Mind2Web 2: Evaluating Agentic Search with Agent-as-a-Judge

[NeurIPS'25] Boyu Gou\*, Zanming Huang\*, Yuting Ning\*, Yu Gu, Michael Lin, Weijian Qi, Andrei Kopanev, Botao Yu, Bernal Jiménez Gutiérrez, **Yiheng Shu**, Chan Hee Song, Jiaman Wu, Shijie Chen, Hanane Nour Moussa, Tianshu Zhang, Jian Xie, Yifei Li, Tianci Xue, Zeyi Liao, Kai Zhang, Boyuan Zheng, Zhaowei Cai, Viktor Rozgic, Morteza Ziyadi, Huan Sun, Yu Su

### 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, ICLR, AAAI

Journal reviewer: IEEE Trans. Big Data

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