

Zhihong Shao

E-mail: zhshaothu@gmail.com

Phone: +86 13121259158

Web: <https://ZhihongShao.github.io>

RESEARCH INTERESTS

My interests are in natural language processing and deep learning. I am particularly interested in how we can build a robust and scalable AI system that can leverage diverse skills (e.g., retrieval, logical reasoning, and numerical reasoning) to aggregate possibly-heterogeneous information and answer natural language questions precisely regardless of their complexity. My recent work focused on (i) comprehensive exploitation of large-scale textual knowledge for multi-answer question answering [3], (ii) (weakly-supervised) neuro-symbolic methods for complex discrete reasoning [1][2][5], (iii) robust classification and text matching (e.g., paraphrase detection and natural language inference) [4].

EDUCATION

Tsinghua University, Beijing, China

September 2019 - Present

Ph.D. Student, Computer Science and Technology

Advisor: Minlie Huang

Beihang University, Beijing, China

September 2015 – July 2019

B.E., Computer Science and Technology

GPA: 3.86/4, *Rank*: 2/213

PUBLICATIONS

- [1] [Synthetic Prompting: Generating Chain-of-Thought Demonstrations for Large Language Models](#)
Zhihong Shao, Yeyun Gong, Yelong Shen, Minlie Huang, Nan Duan, and Weizhu Chen
International Conference on Machine Learning (ICML), 2023.
- [2] [Chaining Simultaneous Thoughts for Numerical Reasoning](#)
Zhihong Shao, Fei Huang, and Minlie Huang
Findings of Empirical Methods in Natural Language Processing (Findings of EMNLP), 2022.
- [3] [Answering Open-Domain Multi-Answer Questions via a Recall-then-Verify Framework](#)
Zhihong Shao, and Minlie Huang
Annual Meeting of the Association for Computational Linguistics (ACL), 2022.
(Best QA system on the [AmbigNQ](#) leaderboard)
- [4] [AdvExpander: Generating Natural Language Adversarial Examples by Expanding Text](#)
Zhihong Shao, Zhongqin Wu, and Minlie Huang
IEEE/ACM Transactions on Audio, Speech, and Language Processing (TASLP), vol. 30, pp. 1184-1196, 2022.
- [5] [A Mutual Information Maximization Approach for the Spurious Solution Problem in Weakly Supervised Question Answering](#)
Zhihong Shao, Lifeng Shang, Qun Liu, and Minlie Huang
Annual Meeting of the Association for Computational Linguistics (ACL), 2021.
- [6] [Long and Diverse Text Generation with Planning-based Hierarchical Variational Model](#)
Zhihong Shao, Minlie Huang, Jiangtao Wen, Wenfei Xu, and Xiaoyan Zhu
Empirical Methods in Natural Language Processing (EMNLP), 2019.

PREPRINT

- [7] [CRITIC: Large Language Models Can Self-Correct with Tool-Interactive Critiquing](#)
Zhibin Gou, **Zhihong Shao**, Yeyun Gong, Yelong Shen, Yujiu Yang, Nan Duan, Weizhu Chen
Arxiv abs/2305.11738, 2023.

[8] **CoTK: An Open-Source Toolkit for Fast Development and Fair Evaluation of Text Generation**

Fei Huang, Dazhen Wan, **Zhihong Shao**, Pei Ke, Jian Guan, Yilin Niu, Xiaoyan Zhu, and Minlie Huang

Arxiv abs/2002.00583, 2020.

RESEARCH EXPERIENCE

CoAI Lab, Tsinghua University

Sep 2019-Present, Beijing, China

Ph.D. Student (Supervisor: Minlie Huang)

Worked on open-domain multi-answer question answering [3], neuro-symbolic reasoning [2][5], robust classification and text matching [4], and data-to-text generation [6].

Microsoft Research Asia

Sep 2022-Present, Beijing, China

Research Intern (Supervisors: Yeyun Gong, Nan Duan, Yelong Shen, Weizhu Chen)

Worked on synthetic prompting [1] which aims to elicit better reasoning in large language models with model-synthesized chain-of-thought demonstrations.

Huawei Noah's Ark Lab

Jun 2020-Oct 2020, Shenzhen, China

Research Intern (Supervisors: Lifeng Shang, Qun Liu)

Worked on neuro-symbolic reasoning [5] under a weakly-supervised setting, where we selected high-quality symbolic reasoning processes for training via mutual information maximization.

AWARDS

1st Prize, Comprehensive Scholarship, Tsinghua University 2022

2nd Prize, Comprehensive Scholarship, Tsinghua University 2021

3rd Prize, the National Final of "LAN QIAO CUP" C/C++ Group 2018

China National Scholarship 2017

1st Prize, National College Students Mathematics Competition (non-math-major) 2016

China National Scholarship 2016

SERVICES

Reviewer/Program Committee: ACL, EMNLP, NLPCC, ARR

TEACHING ASSISTANT

Artificial Neural Network

2019 Fall, 2020 Fall, 2021 Fall, 2022 Fall

Instructor: Minlie Huang

Object-Oriented Programming

2020 Spring, 2021 Spring, 2022 Spring

Instructor: Minlie Huang

Also gave guest lectures and made assignments