

YIHENG SHU

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EDUCATION & EXPERIENCE

Master of Computer Technology, Nanjing University *Sep. 2020 - Jun. 2023*

Advised by Prof. Yuzhong Qu. Direction: Question Answering / Knowledge Graph. Grade: 90.96 / 100

Bachelor of Software Engineering, Northeastern University, China *Sep. 2016 - Jun. 2020*

Advised by Prof. Guibing Guo and Prof. Gang Wu. GPA: 4.1073 / 5.0 (91.073 / 100, top 1.7%)

Research Intern, Microsoft Research Asia *Feb. 2022 - Present*

Advised by Zhiwei Yu, Knowledge Computing group

RESEARCH

Schema Enriched Knowledge Base Question Answering. (Submit to **EMNLP 22'**) *Feb. 2022 - Present*

Working in progress as first author.

- To improve the ability of pre-trained models (e.g., T5) to generate knowledge base queries with dense schema retrieval and constrained decoding.
- It performs better than all 9 competitors on GrailQA leaderboard with both *compositional generalization* and *zero-shot* settings.

QDT for Answering Complex Questions over KBs. (Submit to **ISWC 22'**) *Jun. 2021 - Present*

Xiang Huang, **Yiheng Shu**, Xixin Hu, Xuan Wu, Yuzhong Qu.

- Question decomposition tree (QDT) is proposed to represent the decomposition structure of questions. Our QA methods have achieved state-of-the-art performance in LC-QuAD and ComplexWebQuestions (6 competitors).
- Responsible for the development and experiment of the staged query generation, with part of paper writing.

EDG-based Question Decomposition for Complex QA. (**ISWC 21'**) *Sep. 2020 - Apr. 2021*

Xixin Hu, **Yiheng Shu**, Xiang Huang, Yuzhong Qu*.

- An entity-centric question decomposition method is proposed to represent the question structure in order to handle component linking and subquery composition, and a QA system on DBpedia is implemented. It has achieved state-of-the-art on both LC-QuAD (F1 improved by 39.74%) and QALD-9 (both 4 competitors).
- Participated in the relation linking, decomposition quality evaluation, ablation study, etc.

Deep Learning for Sequential Recommendation. (**TOIS 20'**, **ICWE 19'** tutorial) *Nov. 2018 - May 2019*

Hui Fang*, Danning Zhang, **Yiheng Shu**, Guibing Guo.

- The survey proposes the concept of sequential recommendation, summarizes existing approaches based on three types of behavioral sequences (experience, transaction, and interaction), summarizes the key factors affecting the performance of deep learning models, demonstrates these factors through experiments, and systematically discusses future research directions and challenges.
- Participated in the implementation of some prototype methods (user dwell time, user modeling, data enhancement, etc.) for survey evaluation and paper writing.

HONORS & AWARDS

NJU First Class Academic Scholarship for Master Students (top 20%) *2021*

Outstanding Graduates in Liaoning Province (top 3%) *2020*

Meritorious Winner in MCM/ICM (international top 7%) *2019*

NEU Pacemaker to Outstanding Student (top 1%) *2018*

National Scholarship (top 3%) *2018*