Yiheng Shu (舒意恒)

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Homepage https://yihengshu.github.io
Graduate Student since 2020; MSRA research intern

EXPERIENCE

Nanjing University 2020.09 - 2023.06

Websoft Research Group, Department of Computer Science and Technology
Research Direction: Question Answering / Knowledge Graph; Average Grade: 90.96 / 100

Microsoft Research Asia 2022.02

Research intern of Knowledge Computing group; Research Direction: Knowledge base question answering (KBQA)

Northeastern University (CN) 2016.09 - 2020.06

Software Engineering Bachelor, Software College, GPA 4.1073 / 5.0 (91.073, top 1.7%)
Student Organization: Pioneer Network Center of Northeastern University Committee of the Communist Youth League

RESEARCH

Question Decomposition Tree for Answering Complex Questions over Knowledge Bases 2021.06 - 2021.11

Question decomposition is a promising way to answer complex questions. Existing decomposition methods split questions in pre-defined compositionality types, which is insufficient for diverse complex questions. In this work, question decomposition tree (QDT) is proposed to represent the decomposition structure, and a dataset QDTrees with 6,607 decomposition trees is proposed. In addition, this work proposes a neural method QDTGen to generate a decomposition tree for a input question, as well as a QDT-based query generation method to form a QA system named QDTQA. Experiments show that the method has achieved state-of-the-art performance in LC-QuAD and ComplexWebQuestions.

Responsible for the development and experiment of the query generation, and participated in paper writing. The paper is about to submit soon.

EDG-based Question Decomposition for Complex Question Answering 2020.09 - 2021.04

Knowledge base question answering faces challenges in question understanding, component linking, and subquery composition on complex questions. In this work, an entity-centric question decomposition method is proposed to represent the question structure in order to alleviate these challenges, and a QA system on DBpedia is implemented. Experiments show that the system achieves state-of-the-art on both LC-QuAD and QALD-9, which shows its feasibility of decomposing complex questions.

Participated in the development of the relation linking and experiments including decomposition quality evaluation, ablation study, etc. The paper has been accepted by ISWC 2021.

Deep Learning for Sequential Recommendation: Algorithms, Influential Factors, and Evaluations 2018.11 - 2019.05

This 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 algorithms (user dwell time, user modeling, data enhancement, etc.) in the experiments and paper writing. The paper "Deep Learning for Sequential Recommendation: Algorithms, Influential Factors, and Evaluations" (41 pages, 156 references) is accepted by the journal ACM TOIS. The content is presented as a tutorial in the International Conference on Web Engineering 2019.

HONORS & AWARDS

Nanjing University First Class Academic Scholarship for Master Students	2021
Outstanding Graduates in Liaoning Province	2020
Suzhou Industrial Park Scholarship	2019
Meritorious Winner in MCM/ICM (top 6.79%)	2019
National Scholarship	2018

SKILLS

- **Programming:** Java, SPARQL, Python, C++, Web
- **Languages:** CET-6: 565; Second Prize once and Third Prize twice in National English Competition for College Students