

Mingchen Li

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SUMMARY

My principal research interests lie in the area of knowledge graph and natural language processing (e.g. knowledge graph embedding, question answering over knowledge graph, zero shot learning, relation extraction, entity extraction etc). A self-motivated and creative quick-learner with a strong passion for **NLP**, **Knowledge Graph**, **Machine Learning**, **Deep Learning** and proven skills in programming.

EDUCATION

- **Georgia State University (GSU)** ATL, US
M.S. in Computer Science, GPA: 3.93/4.3 1.2021-12.2022
Thesis: Semantic-Structure based Query Graph Prediction for KGQA
- **Qufu Normal University (QFNU)** Shandong, China
B.S. in Computer Science, GPA: 3.6/4.3 2015-2019
Thesis: Chinese Word Sense Disambiguation based on Bi-LSTM

UNDER REVIEW

- **A Hierarchical N-Gram Framework for Zero-Shot Link Prediction:** EMNLP2022. Mingchen Li and Junfan Chen, Samuel Mensah, etc. *Key Tec: Transformer optimization, Knowledge graph embedding (TransE, RotatE, etc.).* Paper Link.
- **Locality Awarred Zero-shot Learning Framework for KGE:** Mingchen Li and Richong, Zhang, etc. *Key Tec: Transformer optimization, Knowledge graph embedding (TransE, RotatE, etc.).*

PUBLICATIONS

- **Semantic-Structure based Query Graph Prediction for KGQA:** Coling2022. Mingchen Li and Jonathan Shihao Ji. *Key Tec: text classification based BERT, ranking model based BERT.* Paper Link.
- **Multi-Fusion Chinese WordNet (MCW): Compound of Machine Learning and Manual Correction:** Mingchen Li and Zhou, Zili and Wang, Yanna, CICLing 2019. *Key Tec: Word similarity.* Paper Link.
- **Solving the Chinese Physical Problem Based on Deep Learning and Knowledge Graph:** Mingchen Li and Zhou, Zili and Wang, Yanna, CS & IT Conference Proceedings, 2019. *Key Tec: Knowledge graph building, Knowledge inference .* Paper Link.

PATENTS

- **An intelligent collection system for testing paper:** Yanna Wang, Zili Zhou, Mingchen Li, Yantian Hu, Zheng Su, Dezhi Rong, Ning Zhang, 2017. Publication number: CN107908752A.
- **An intelligent hardware control method driven by knowledge graph:** Zili Zhou, Yanna Wang, Jinghu Zhang, Ning Zhang, Mingchen Li, Dezhi Rong, 2017. Publication number: CN107272521B.

EXPERIENCE

- **Natural Language Processing Center, Virginia Tech** Spring 2022
Research Assistant
 - **Advisor:** Prof.Lifu Huang
 - **Research title:** information extraction
 - **Contributions:** Design a model to extract the entity and relation in open corpus by **prompt tuning in language model** (BERT, GPT2,..)
- **BDBC and SKLSDE, Beihang University (BUAA)** Summer 2021
Research Assistant
 - **Advisor:** Prof.RiChong Zhang
 - **Research title:** Zero shot Learning in Knowledge Graph Embedding
 - **Contributions:** I proposed an **Adaptively Weighted Transformer** and Structure-Aware Embedding Learning method to calculate the information of neighbor relation and infer the tail entity. In order to explore more far-reaching applications, this model also is used to **Question Answering over Knowledge Graph in Zero Shot Learning.**
- **Computer Science, Georgia State University (GSU)** Spring 2021
Research Assistant
 - **Advisor:** Prof.Jonathan Shihao Ji
 - **Research title:** Complex Question Answering over Knowledge Graph.
 - **Contributions:** To denoise the candidate query graph, I proposed a Semantic Structure methods to generate the **Query Graph**. In this progress, a novel classifier **StructureBERT** is proposed to predict the Semantic Structure for each question. A more deeper BERT model is used to **query graph ranking.**

HONORS AND AWARDS

- Research assistantship, tuition waiver, Georgia State University. 2021-2023
- University Scholarships, Qufu Normal University. 2015-2019

SKILLS SUMMARY

- **Languages:** Python, C++, JAVA
- **Frameworks:** TensorFlow, Pytorch, MySQL, MongoDB, Neo4j

TEACHING EXPERIENCE

- **Teaching Assistant**
• *Teaching Assistant at Department of Computer Science, Georgia State University, Deep Learning (CSC 8851)*