CHEN ZHENG

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EDUCATION

Michigan State University Degree: Ph.D. *Aug. 2018 - Present*
Major: Computer Science GPA: 4.0
Advisor: Dr. Parisa Kordjamshidi
Research: Nature Language Processing (NLP), Deep Learning, Question Answering, and Information Retrieval.

Binghamton University Degree: Master *Aug. 2015 - Dec. 2017*
Major: Computer Science GPA: 3.66
Advisor: Dr. Zhongfei(Mark) Zhang
Research: NLP (Nature Language Processing) and Deep Learning.

Tianjin Polytechnic University Degree: Bachelor *Aug. 2010 - Aug. 2014*
Major: Computer Science GPA: 3.5
Advisor: Dr. Weidong Min

PUBLICATION

1. **Zheng, Chen**, and Parisa Kordjamshidi. **"Relevant CommonSense Subgraphs for" What if..." Procedural Reasoning."** Annual Conference of the Association for Computational Linguistics (**ACL 2022 findings**).
2. **Zheng, Chen**, and Parisa Kordjamshidi. **"Relational Gating for "What If" Reasoning."** The 30th International Joint Conference on Artificial Intelligence (**IJCAI 2021**. Acceptance rate is only 13.9%).
3. **Zheng, Chen**, and Parisa Kordjamshidi. **"SRLGRN: Semantic Role Labeling Graph Reasoning Network."** The 2020 Conference on Empirical Methods in Natural Language Processing (**EMNLP 2020**. Acceptance rate: 22.4%).
4. **Zheng, Chen**, Quan Guo, and Parisa Kordjamshidi. **"Cross-Modality Relevance for Reasoning on Language and Vision."** Annual Conference of the Association for Computational Linguistics (**ACL 2020**. Acceptance rate: 22.7%).
5. **Zheng, Chen**, Yu Sun, Shengxian Wan, and Dianhai Yu. **"RLTM: an efficient neural IR framework for long documents."** The 28th International Joint Conference on Artificial Intelligence (**IJCAI 2019**. Acceptance rate: 17.9%).
6. **Zheng, Chen**, Zhai, Shuangfei, and Zhang, Zhongfei. **"A deep learning approach for expert identification in question answering communities."** arXiv preprint arXiv:1711.05350 (2017).

INTERNSHIP EXPERIENCE

1. **Research internship in Information Retrieval group, JD.com Inc.** *Jun. 2019 - Aug. 2019*
   - Mentor: Wen-yun Yang (Principal Scientist).
   - Design a novel retrieval approach, DPSR, to retrieve items that are semantically relevant but not exact matching to query terms and retrieve items that are more personalized to different users for the same search query.
   - Paper name: Towards Personalized and Semantic Retrieval: An End-to-End Solution for E-commerce Search via Embedding Learning.
   - The paper was published in SIGIR 2020. My name appears in the Acknowledgement section.
2. **Research internship in Natural Language Processing (NLP) group, Baidu Inc.** *Jan. 2018 - July. 2018*
   - Mentor: Yu Sun (NLP Chief Architect).
   - Build a novel neural ranking framework called Reinforced Long Text Matching which matches a query with long documents.
   - State-of-the-art performance in NDCG and MAP. The paper was published in IJCAI 2019.
3. **Research internship in Applied Machine Learning (AML) group, Tiktok Inc.** *Summer 2022*
   - Mentor: Guokun Lai (Research Scientist).

RESEARCH EXPERIENCE

1. **Dynamic Relevance Graph Network for Knowledge-Aware Question Answering** *Oct. 2021 - Jan. 2022*
   - Solve the challenge of learning and reasoning over Commonsense QA given an external source of knowledge.
   - Design a dynamic graph reasoning network that utilize the relevance between the graph nodes to establish new edges dynamically for learning node representations.
   - State-of-the-art performance on CommonsenseQA benchmark. The paper was submitted to NAACL 2022.
2. **Relevant CommonSense Subgraphs for Procedural Reasoning** *Jun. 2021 - Sep. 2021*
   - Deal with the challenge of learning causal reasoning over procedural text to answer causal-effect questions when external commonsense knowledge is required.
   - Design a novel multi-hop graph reasoning model to extract a commonsense subgraph with the most relevant information.

- Predict the causal answer by reasoning over the representations obtained from the commonsense subgraph and the contextual interactions between the questions and context.
- State-of-the-art performance on WIQA benchmark. The paper was submitted to ACL 2022.

3. **Relational Gating for "What If" Reasoning.** *Sep. 2020 - May. 2021*
   - Solve the challenge of learning and causal-effect reasoning over procedural text.
   - Propose novel entity gating and relational gating mechanism to capture the most important entities and relationships involved in qualitative comparison, causal reasoning and multi-hop reasoning.
   - Competitive performance on the WIQA benchmark. The paper was published in IJCAI 2021.
4. **SRLGRN: Semantic Role Labeling Graph Reasoning Network** *Jan. 2020 - Aug. 2020*
   - Deal with the challenge of learning and reasoning over multi-hop question answering (QA).
   - Build a graph reasoning network based on the heterogeneous semantic role labeling graphs.
   - The model learns cross paragraph reasoning paths and find the supporting facts and the answer jointly.
   - Competitive performance on the HotpotQA benchmark. The paper was published in EMNLP 2020.
5. **Cross-Modality Relevance for Reasoning on Language & Vision** *Sep. 2019 - Dec. 2019*
   - Design a novel cross-modality relevance model to learn the relevance representation between components of various input modalities.
   - Introduce the higher-order relevance between entity relations in the text and object relations in the image.
   - State-of-the-art performance in NLVR and VQA tasks. The paper was published in ACL 2020.
6. **Spatial Semantic Representation on Language and Vision** *Sep. 2018 - May. 2019*
   - propose a novel end-to-end deep learning and reasoning model with explicit spatial semantics, called Deep-SpRQL, for joint language and vision understanding.
7. **Expert Identification in Question Answering Communities** *Aug. 2016 - May. 2017*
   - Build a language model for the expert identification task in QA communities.
   - The Top-1 test accuracy outperforms most of the baselines. The paper was published in arXiv.

SERVICES

Program Committe Member / Reviewer

- ACL Rolling Review, AAAI 2022, NLPCC 2021, EMNLP 2021, IJCAI 2021, AAAI 2021, EMNLP 2020, IJCAI 2020.

SPECIAL SKILLS

- Language: Mandarin (native), English (fluent).
- Programming: Java, Python, SQL.
- Deep learning Framework: Pytorch, TensorFlow, AllenNLP.
- Machine Learning: NLP Algorithms and Machine Learning Algorithms.
- Big Data: Hive, Pig, MapReduce.