MAN LUO

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EDUCATION

Ph.D. student, Computer Science (GPA:3.85/4.0) *August 2018 - (Expected) May 2023*
Arizona State University (ASU), Tempe, Arizona, USA
Advisor: Dr. Chitta Baral

Bachelor of Science, Computer Science (GPA:85/100) *September 2014 - July 2018*
Beijing Forestry University, Beijing, China

RESEARCH INTEREST

Natural Language Processing, with a special focus on open domain retrieval under multi-modal setting, and open-book question answering, with an interest in dialogue system.

WORK EXPERIENCE

Research Intern at Salesforce.Inc *May 2021 - Aug 2021*
Research Assistant at ASU *Aug 2018 - Present*

RESEARCH EXPERIENCE (SELECTED FROM RECENT)

Understanding Extractive and Generative Readers in MRC *May 2021 - Sep 2021*

- Implement three models using Transformer-based extractive and generative readers to solve ReQA machine reading comprehensive (MRC) task.
- Conduct comprehensive experiments to compare extractive and generative readers and draw conclusions why extractive can be better than generative reader in certain scenarios, and vice versa.
- Design a joint model of extractive and generative reader which performs better than single model in in-domain testing.

Improve Neural Retrieval in Biomedical Domain *Jan 2021 - Sep 2021*

- Propose a template-based question generation method to increase training data, which can automatically extract templates from target domain and generate questions conditioned on a template and a context.
- Develop two novel pre-training tasks that are closely aligned to the downstream task of information retrieval.
- Introduce a model to improve word matching capacity of neural retriever by encoding each context into multiple contextual vectors.

Weakly-Supervised Visual-Retriever-Reader for Ok-VQA [Github] *May 2021 - Sep 2021*

- Automatically collect large knowledge corpus from Web-data for knowledge based visual question answering (Ok-VQA) challenge.
- Propose a Visual Retriever-Reader pipeline to approach Ok-VQA, where visual retriever aims to retrieve relevant knowledge by multi-modality query, and the visual reader seeks to predict answers based query, image and given knowledge.

TEACHING/MENTORING

Teaching Assistant

CSE259 Logic in Computer Science — *Dec 2020 - Dec 2021*

CSE579 Knowledge Representation and Reasoning — *Aug 2019 - Dec 2019*

Master Thesis

Yankai Zeng (now a Ph.D student in The University of Texas at Dallas). — *Aug 2020 - June 2021*

Course Project Mentor

CSE576 Natural Language Processing

- Domain Oriented Question Generation, 26 students, — *Aug 2021 - Dec 2021*
- Differential Diagnosis Dialogue Generation, 20 students, — *Aug 2021 - Dec 2021*
- Semantic Information Availability (SIA) Task, 5 students, — *Jun 2020 - May 2020*
- Question Answering with Varied Types of Reasoning, 5 students. — *Jun 2020 - May 2020*

INVITED TALK

"Semantic Searching in Biomedical Domain" at exploreCSR workshop (ASU). — *Mar 2021*

AWARD

Finalist of 2021 Knowledge Mobilization Awards. Website — *April 2021*

2019 ICLP conference Doctoral Consortium Travel Award. Website — *September 2019*

Honorable Mention in Interdisciplinary Contest in Modeling(ICM) — *April 2017*

PUBLICATION

- **Luo, M.**, Mitra, A., Gokhale, T., Baral, C. Improving Biomedical Information Retrieval with Neural Retrievers. AAAI 2022.
- **Luo, M.**, Zeng, Y., Banerjee, P., Baral, C. Weakly-Supervised Visual-Retriever-Reader for Knowledge-based Question Answering. EMNLP 2021.
- **Luo, M.** Sampat, S. Tallamn, R. Zeng, Y. Vancha, M. Sajja, A. Baral, C. Just because you are right, doesnt mean I am wrong: Overcoming a bottleneck in development and evaluation of Open-Ended VQA tasks. EACL 2021.
- Lee, J. and **Luo, M.**, 2019. Strong equivalence for LPMLN programs. ICLP 2019.

PRE-PRINT

- **Luo, M.**, Chen, S., Baral, C. (2021). A Simple Approach to Jointly Rank Passages and Select Relevant Sentences in the OBQA Context. arXiv preprint arXiv:2109.10497
- Banerjee, P., Baral, C., **Luo, M.**, Mitra, A., Pal, K., Son, T. C., Varshney, N. (2020). Can Transformers Reason About Effects of Actions? arXiv preprint arXiv:2012.09938.