CHUAN MENG

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RESEARCH INTERESTS

Interested in information retrieval (IR) and natural language processing (NLP) with large language models (LLMs), with a particular focus on

- **conversational search/knowledge-grounded dialogue systems**,
- **query performance prediction (QPP)**,
- **LLM-based relevance judgment generation**,
- **LLM-based re-ranking**, and
- **generative retrieval**.

EDUCATION

University of Amsterdam (UvA), The Netherlands *October 2021 - Present*
Ph.D. in Artificial Intelligence
Supervisors: Prof. dr. Maarten de Rijke and dr. Mohammad Aliannejadi

Shandong University, China *September 2018 - June 2021*
Master in Computer Science and Technology
Supervisors: Prof. dr. Zhumin Chen, dr. Pengjie Ren, and dr. Zhaochun Ren
Master's thesis "Research on Knowledge-Grounded Non-Task-Oriented Conversational System" [pdf]

Shandong Normal University, China *September 2014 - June 2018*
Bachelor in Electronic Commerce

WORK EXPERIENCE

Amazon, United Kingdom *August 2024 - Present*
Applied scientist intern, focusing on Rufus (Amazon's generative shopping assistant)
Manager: Dr. Gabriella Kazai

PUBLICATIONS

As of August 2024, I have 225 citations (Google Scholar) with an H-index of 6.

I have authored papers published in proceedings, such as SIGIR, EMNLP, CIKM, and AAAI.

1. **Query Performance Prediction using Relevance Judgments Generated by Large Language Models**
   Chuan Meng, Negar Arabzadeh, Arian Askari, Mohammad Aliannejadi, and Maarten de Rijke
   Under review for TOIS: ACM Transactions on Information Systems
   pdf, code
2. **Generative Retrieval with Few-shot Indexing**
   Arian Askari*, **Chuan Meng*** (co-first author), Mohammad Aliannejadi, Zhaochun Ren, Evangelos Kanoulas, and Suzan Verberne
   Under review for EMNLP 2024: The 2024 Conference on Empirical Methods in Natural Language Processing
   pdf
3. **Self-seeding and Multi-intent Self-instructing LLMs for Generating Intent-aware Information-Seeking Dialogs**

Arian Askari, Roxana Petcu, **Chuan Meng**, Mohammad Aliannejadi, Amin Abolghasemi, Evangelos Kanoulas, and Suzan Verberne.
Under review for EMNLP 2024: The 2024 Conference on Empirical Methods in Natural Language Processing
pdf, code

4. **Can We Use Large Language Models to Fill Relevance Judgment Holes?**
Zahra Abbasiantaeb, **Chuan Meng**, Leif Azzopardi, Mohammad Aliannejadi
LLM4Eval: The First Workshop on Large Language Models (LLMs) for Evaluation in Information Retrieval
pdf
5. **Ranked List Truncation for Large Language Model-based Re-Ranking**
Chuan Meng, Negar Arabzadeh, Arian Askari, Mohammad Aliannejadi, and Maarten de Rijke.
SIGIR 2024: The 47th International ACM SIGIR Conference on Research and Development in Information Retrieval
pdf, code
6. **Query Performance Prediction for Conversational Search and Beyond**
Chuan Meng
SIGIR 2024: The 47th International ACM SIGIR Conference on Research and Development in Information Retrieval
pdf
7. **LLM-based Retrieval and Generation Pipelines for TREC Interactive Knowledge Assistance Track (iKAT) 2023.**
Zahra Abbasiantaeb, **Chuan Meng**, David Rau, Antonis Krasakis, Hossein A. Rahmani, and Mohammad Aliannejadi.
TREC 2023: The Thirty-Second Text REtrieval Conference (**Our submitted runs ranked 1st**)
pdf
8. **Expand, Highlight, Generate: RL-driven Document Generation for Passage Reranking**
Arian Askari, Mohammad Aliannejadi, **Chuan Meng**, Evangelos Kanoulas, and Suzan Verberne
EMNLP 2023 (main conference): The 2023 Conference on Empirical Methods in Natural Language Processing
pdf, code
9. **System Initiative Prediction for Multi-turn Conversational Information Seeking**
Chuan Meng, Mohammad Aliannejadi, and Maarten de Rijke
CIKM 2023: The 32nd ACM International Conference on Information and Knowledge Management
pdf, code
10. **Query Performance Prediction: From Ad-hoc to Conversational Search**
Chuan Meng, Negar Arabzadeh, Mohammad Aliannejadi, and Maarten de Rijke
SIGIR 2023: The 46th International ACM SIGIR Conference on Research and Development in Information Retrieval
pdf, code
11. **Performance Prediction for Conversational Search Using Perplexities of Query Rewrites**
Chuan Meng, Mohammad Aliannejadi, and Maarten de Rijke
QPP++ 2023: Query Performance Prediction and Its Evaluation in New Tasks Workshop co-located with The 45th European Conference on Information Retrieval
pdf, code
12. **Initiative-Aware Self-Supervised Learning for Knowledge-Grounded Conversations**
Chuan Meng, Pengjie Ren, Zhumin Chen, Zhaochun Ren, Tengxiao Xi, and Maarten de Rijke
SIGIR 2021: The 44th International ACM SIGIR Conference on Research and Development in Information Retrieval
pdf
13. **Conversations Powered by Cross-Lingual Knowledge**
Weiwei Sun*, **Chuan Meng*** (co-first author), Qi Meng, Zhaochun Ren, Pengjie Ren, Zhumin Chen,

and Maarten de Rijke
SIGIR 2021: The 44th International ACM SIGIR Conference on Research and Development in Information Retrieval
pdf, code

14. **DukeNet: A Dual Knowledge Interaction Network for Knowledge-Grounded Conversation**
Chuan Meng, Pengjie Ren, Zhumin Chen, Weiwei Sun, Zhaochun Ren, Zhaopeng Tu, and Maarten de Rijke
SIGIR 2020: The 43rd International ACM SIGIR Conference on Research and Development in Information Retrieval
pdf, code
15. **RefNet: A Reference-aware Network for Background Based Conversation**
Chuan Meng, Pengjie Ren, Zhumin Chen, Christof Monz, Jun Ma, and Maarten de Rijke
AAAI 2020: The Thirty-Fourth AAAI Conference on Artificial Intelligence.
pdf, code

ACADEMIC SERVICE

- Program committee member: SIGIR 2024, CIKM 2024–2022, ACL 2023, EMNLP 2023–2021, The Web Conf 2024, WSDM 2025–2022, ECIR 2024, ICTIR 2023, SIGKDD 2022, ECML/PKDD 2022–2021, AAAI 2021, COLING 2025, 2022 & 2020
- Journal reviewer: Transactions on Information Systems (TOIS), Information Processing and Management (IPM)
- Webmaster for the IRLab website, 2023-present
- Chair for internal seminars at IRLab, 2023

TEACHING & SUPERVISION

- Tutorial organization:
  - **Query Performance Prediction: From Fundamentals to Advanced Techniques**
    Negar Arabzadeh, **Chuan Meng**, Mohammad Aliannejadi, and Ebrahim Bagheri
    ECIR 2024: The 46th European Conference on Information Retrieval
    pdf, slides
- Teaching assistant
  - Information Retrieval, 2023, University of Amsterdam; project design and grading
  - Information Retrieval, 2022, University of Amsterdam; project design and grading
  - Information Retrieval, 2020, Shandong University; assignment/project design and grading
  - Natural Language Processing, 2019, Shandong University; assignment/project design and grading
- PhD mentorship (Research-oriented): Lili Lu, Universit della Svizzera italiana (USI), with Prof. dr. Fabio Crestani

INVITED TALKS

- Opportunities and Challenges of LLMs in Information Retrieval, 14 August 2024, Objective, Inc. (host: Pablo Mendes, Co-founder & CEO at Objective, Inc.)
- Opportunities and Challenges of LLMs in Information Retrieval, 17 April 2024, Amazon (Seattle) (host: Shervin Malmasi, applied science manager at Amazon) [slides]
- System Initiative Prediction and Query Performance Prediction for Conversational Information Seeking, 3 Nov 2023, University College London (UCL) [slides]
- Query Performance Prediction for Conversational Search, 18 May 2023, University of Glasgow [slides]

SCHOLARSHIPS & AWARDS

- Excellent Master's Thesis of Shandong Province, 2022

- National Scholarship (China), 2020/2016
- Outstanding Graduates of Shandong Province, 2021/2017
- SIGIR Student Travel Grant, 2020
- Scholarship for Outstanding Postgraduate Cadres of Shandong University, 2020/2019
- AAAI Student Scholar Scholarship, 2019
- Academic Scholarship for Master students of Shandong University, 2019
- Outstanding Students of Shandong Province, 2017

RESOURCES

I have curated the following resources:

- a code repository (**over 1,100 visitors**) providing scripts for fine-tuning open-source LLMs to generate relevance judgments, within a Python/PyTorch framework.
- a code repository (**over 2,000 visitors**) providing a comprehensive implementation of query performance prediction (QPP) methods, within a unified Python/PyTorch framework.
- a code repository (**over 600 visitors**) offering a comprehensive implementation of ranked list truncation methods, within a unified Python/PyTorch framework.
- a paper reading list (**over 260 stars**) on knowledge-grounded dialogue systems.

I also contributed to Pyserini, a Python toolkit for reproducible information retrieval research.

REFERENCES

Prof. dr. Maarten de Rijke
Distinguished University Professor at the University of Amsterdam
m.derijke@uva.nl

Dr. Mohammad Aliannejadi
Assistant professor at the University of Amsterdam
m.aliannejadi@uva.nl

Dr. Zhaochun Ren
Associate professor at Leiden University
z.ren@liacs.leidenuniv.nl