

CHUAN MENG

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RESEARCH INTERESTS

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

- conversational agents: conversational search, proactive agents, knowledge-grounded dialogue systems
- neural ranking: LLM-based re-ranking, generative retrieval
- automatic evaluation: query performance prediction, LLM-based relevance judgment prediction

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](#). Mentor: Dr. [Francesco Tonolini](#).

PUBLICATIONS

As of November 2024, I have 236 citations (Google Scholar) with an H-index of 7.

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

Submitted to ARR: ACL Rolling Review

[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.

Submitted to ARR: ACL Rolling Review

[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](#), [code](#)
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 Conver-**

sation

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

- Workshop organization:
 - **QPP++2025: Query Performance Prediction and its Applications in the Era of Large Language Models**
Chuan Meng, Guglielmo Faggioli, Mohammad Aliannejadi, Nicola Ferro, and Josiane Mothe
ECIR 2025: The 47th European Conference on Information Retrieval
(Will be held from the 6th to the 10th of April 2025 in Lucca, Italy)
- Program committee member: ACL 2023, EMNLP 2023–2021, COLING 2025, 2022 & 2020, SIGIR 2024, CIKM 2024–2022, The Web Conf 2024, WSDM 2025–2022, ECIR 2025–2024, ICTIR 2023, SIGKDD 2022, ECML/PKDD 2022–2021, AAAI 2021
- 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: Theory, Techniques and Applications**
Negar Arabzadeh, **Chuan Meng**, Mohammad Aliannejadi, and Ebrahim Bagheri
WSDM 2025: The 18th ACM International Conference on Web Search and Data Mining
(Will be held from the 10th to the 14th of March 2025 in Hannover, Germany)
 - **Query Performance Prediction: Techniques and Applications in Modern Information Retrieval**
Negar Arabzadeh, **Chuan Meng**, Mohammad Aliannejadi, and Ebrahim Bagheri
SIGIR-AP 2024: The 2nd ACM SIGIR-AP conference
(Will be held from the 9th to the 12th of December 2024 in Tokyo, Japan)
 - **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
 - **Course**: Information Retrieval
Institution and year: University of Amsterdam
Year: 2023
My responsibilities: project design and grading
 - **Course**: Information Retrieval
Institution: University of Amsterdam
Year: 2022
My responsibilities: project design and grading

- **Course:** Information Retrieval
Institution: Shandong University
Year: 2020
My responsibilities: assignment design, project design and grading
- **Course:** Natural Language Processing
Institution: Shandong University
Year: 2019
My responsibilities: assignment design, 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**
21 October 2024, University of Glasgow
Host: Iadh Ounis, professor at the University of Glasgow
[slides](#), [post](#)
- **Predicting the Right Moment for System Initiative in Mixed-Initiative Conversational Search**
26 August 2024, Amazon (London)
Host: Gabriella Kazai, principal applied scientist at Amazon
[slides](#)
- **Opportunities and Challenges of LLMs in Information Retrieval**
14 August 2024, Objective, Inc.
Host: Pablo Mendes, co-founder & CEO at Objective, Inc.
[slides](#)
- **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)
Host: Xi Wang, lecturer at the University of Sheffield
[slides](#), [post](#)
- **Query Performance Prediction for Conversational Search**
18 May 2023, University of Glasgow
Host: Iadh Ounis, professor at the University of Glasgow
[slides](#), [post](#)

RESEARCH FUNDING PROPOSALS

During my master's at Shandong University, I was involved in drafting the methodology sections for three research funding proposals.

- **Development of an AI-assisted Writing Robot System Based on News Reporting Scenarios**
National Key Research and Development Program project (Project No.: 2020YFB1406700)
- **Research on Explainable Medical Health Question-Answering Technology Based on Multi-Source Heterogeneous Data Fusion**
National Natural Science Foundation of China (NSFC) project (Project No.: 61972234)
- **Research on Conversational Recommendation Systems and Functional Enhancements Based Primarily on Implicit Feedback Data**
National Natural Science Foundation of China (NSFC) project (Project No.: 62072279)

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 1,200 visitors**) providing scripts for fine-tuning open-source LLMs to generate relevance judgments, within a Python/PyTorch framework.
- a [code repository](#) (**over 2,200 visitors**) providing a comprehensive implementation of query performance prediction (QPP) methods, within a unified Python/PyTorch framework.
- a [code repository](#) (**over 700 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