

CHUAN MENG

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RESEARCH INTERESTS

I have been actively researching two core areas in AI: Information Retrieval (IR) and Natural Language Processing (NLP). My work focuses on leveraging machine learning, large language models (LLMs) to drive advancements in three key directions:

- **Conversational agents:** proactive conversational search, knowledge-grounded dialogue systems
- **Model- and data-efficient neural ranking:** LLM-based re-ranking, generative retrieval, synthetic data generation
- **Automatic evaluation:** LLM-based relevance judgment prediction, query performance prediction

EDUCATION

University of Amsterdam, The Netherlands

October 2021 - Present

Ph.D. in Artificial Intelligence

Supervisors: Prof. dr. [Maarten de Rijke](#) and dr. [Mohammad Aliannejadi](#)

PhD thesis: Optimizing Agentic Workflows for Information Access

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 - January 2025

Applied Scientist Intern, focusing on LLM-powered proactive conversational agents

Manager: Dr. [Gabriella Kazai](#). Mentor: Dr. [Francesco Tonolini](#).

PUBLICATIONS

As of April 2025, I have 340 citations (Google Scholar) with an H-index of 11.

I have authored papers published in proceedings/journals, such as SIGIR, EMNLP, CIKM, NAACL, AACL, ECIR, and TOIS.

1. Bridging the Gap: From Ad-hoc to Proactive Search in Conversations

Chuan Meng, Francesco Tonolini, Fengran Mo, Nikolaos Aletras, Emine Yilmaz, and Gabriella Kazai

SIGIR 2025: The 48th International ACM SIGIR Conference on Research and Development in Information Retrieval
to appear

2. Query Performance Prediction using Relevance Judgments Generated by Large Language Models

Chuan Meng, Negar Arabzadeh, Arian Askari, Mohammad Aliannejadi, and Maarten de Rijke

TOIS: ACM Transactions on Information Systems

[pdf](#), [code](#)

3. **Zero-Shot and Efficient Clarification Need Prediction in Conversational Search**
Lili Lu, **Chuan Meng**, Federico Ravenda, Mohammad Aliannejadi and Fabio Crestani
ECIR 2025: The 47th European Conference on Information Retrieval
[pdf](#), [code](#)
4. **Improving the Re-Usability of Conversational Search Test Collections**
Zahra Abbasiantaeb, **Chuan Meng**, Leif Azzopardi and Mohammad Aliannejadi
ECIR 2025: The 47th European Conference on Information Retrieval
[pdf](#), [code](#)
5. **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.
NAACL 2025: The 2025 Annual Conference of the Nations of the Americas Chapter of the Association for Computational Linguistics
[pdf](#), [code](#)
6. **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](#)
7. **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](#)
8. **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](#)
9. **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](#)
10. **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](#)
11. **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](#)
12. **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](#)
13. **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](#)

14. **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](#)

15. **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](#)

16. **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](#)

17. **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](#)

18. **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
6th–10th April 2025, Lucca, Italy
[pdf](#), [website](#)
- Program committee member: ACL 2023, EMNLP 2023–2021, SIGIR 2025–2024, COLING 2025, 2022 & 2020, CIKM 2025–2022, The Web Conf 2025–2024, WSDM 2025–2022, ECIR 2025–2024, ICTIR 2023, SIGKDD 2022, ECML/PKDD 2022–2021, AAAI 2021
- ACL Rolling Review (ARR) reviewer 2025
- Journal reviewer: Transactions on Information Systems (TOIS), Information Processing and Management (IP&M)

TEACHING & SUPERVISION

- Tutorial organization:
 - **Conversational Search: From Fundamentals to Frontiers in the LLM Era**
Fengran Mo, **Chuan Meng**, Mohammad Aliannejadi, and Jian-Yun Nie
SIGIR 2025: The 48th International ACM SIGIR Conference on Research and Development in

Information Retrieval

13th–17th July 2025, Padua, Italy

to appear

– **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

10th–14th March 2025, Hanover, Germany

[pdf](#), [slides](#)

– **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

9th–12th December 2024, Tokyo, Japan

[pdf](#), [slides](#)

– **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

24th–28th March 2024, Glasgow, UK

[pdf](#), [slides](#)

• Teaching assistant

– **Course**: Information Retrieval (about **60** students)

Institution: University of Amsterdam

Year: 2023

My responsibilities: project design and grading

– **Course**: Information Retrieval (about **60** students)

Institution: University of Amsterdam

Year: 2022

My responsibilities: project design and grading

– **Course**: Information Retrieval (about **60** students)

Institution: Shandong University

Year: 2020

My responsibilities: assignment design, project design and grading

– **Course**: Natural Language Processing (about **70** students)

Institution: Shandong University

Year: 2019

My responsibilities: assignment design, project design and grading

• PhD mentorship (Research-oriented): [Lili Lu](#), Università 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](#)

ADMINISTRATION ACTIVITIES

- Manager for the [IRLab LinkedIn](#) account, 2025–present
- Webmaster for the [IRLab website](#), 2023-2024
- Chair for internal seminars at IRLab, 2023
- Lead organizer of the IRLab BBQ event, 2023

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 1,800 visitors**) providing scripts for fine-tuning open-source LLMs to generate relevance judgments, within a Python/PyTorch framework.
- a [code repository](#) (**over 2,800 visitors**) providing a comprehensive implementation of query performance prediction (QPP) methods, within a unified Python/PyTorch framework.

- a [code repository](#) (**over 1,100 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.

Also, I have contributed to key open-source toolkits in information retrieval, including:

- [Pyserini \(v0.19.2\)](#), a Python toolkit for reproducible information retrieval research.
- [Tevatron](#), a flexible and efficient Python toolkit for training and inference of neural retrieval models.

REFERENCES

Prof. dr. [Maarten de Rijke](#)

Distinguished University Professor at the University of Amsterdam
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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

Prof. dr. [Fabio Crestani](#)

Full Professor at Università della Svizzera Italiana (USI)
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