

# CHUAN MENG

LAB42, Science Park 900, 1098 XH Amsterdam, The Netherlands

+44 07555872900 ◊ c.meng@uva.nl ◊ [\[Website\]](#) ◊ [\[Google Scholar\]](#) ◊ [\[DBLP\]](#) ◊ [\[Twitter\]](#) ◊ [\[LinkedIn\]](#)

## RESEARCH INTERESTS

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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

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**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

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**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

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As of October 2024, I have 230 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

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- 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 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

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- 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

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- **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

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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

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- 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

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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

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

Distinguished University Professor at the University of Amsterdam

[m.derijke@uva.nl](mailto:m.derijke@uva.nl)

Dr. [Mohammad Aliannejadi](#)

Assistant professor at the University of Amsterdam

[m.aliannejadi@uva.nl](mailto:m.aliannejadi@uva.nl)

Dr. [Zhaochun Ren](#)

Associate professor at Leiden University

[z.ren@liacs.leidenuniv.nl](mailto:z.ren@liacs.leidenuniv.nl)