CHUAN MENG

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RESEARCH INTERESTS

My research focuses on Agentic AI, Natural Language Processing (NLP), and Information Retrieval (IR), specifically **teaching AI agents to search** cost-effectively, for knowledge-intensive tasks, such as deep research.

WORK EXPERIENCE

The University of Edinburgh, United Kingdom *September 2025 - present*
Postdoctoral Researcher (Research Associate)
Funded by Turing AI Fellowships
Supervisor: Dr. Jeff Dalton

Amazon, United Kingdom *August 2024 - January 2025*
Applied Scientist Intern, working on proactive conversational agents
Manager: Dr. Gabriella Kazai. Mentor: Dr. Francesco Tonolini.

EDUCATION

University of Amsterdam, The Netherlands *October 2021 - June 2025*
Ph.D. in Artificial Intelligence
Supervisors: Prof. dr. Maarten de Rijke (ACM Fellow) and dr. Mohammad Aliannejadi
PhD thesis: Optimizing Agentic Workflows for Information Access [pdf]

Shandong University, China *September 2018 - June 2021*
Master's degree 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's degree in Electronic Commerce

SELECTED PUBLICATIONS

As of September 2026, I have published **30+** papers, with 800+ citations (Google Scholar) and an h-index of 17. I have published at venues such as SIGIR, ACL, EMNLP, AAAI, NAACL, CIKM, ECIR, and TOIS.

According to the ICORE 2026 conference ranking, **11** of my papers are at CORE A* venues and **5** at CORE A venues.

1. **Revisiting Text Ranking in Deep Research**
   Chuan Meng, Litu Ou, Sean MacAvaney, and Jeff Dalton
   SIGIR 2026 (CORE A*): The 49th International ACM SIGIR Conference on Research and Development in Information Retrieval
   (**Ranked 1st** in accuracy among 84 open-source agent systems from 9 countries (below 100B parameters) on the BrowseComp-Plus leaderboard, organised by the University of Waterloo, Carnegie Mellon University, and others)
   [pdf, code]

2. **Rewrite What Matters: Adaptive Multilingual Query Rewriting for Reasoning via Agentic Reinforcement Learning**
   Rui Qi, Yufeng Chen, Yunlong Liang, **Chuan Meng**, Sijin Lu, Ge Shi, Jinan Xu, Fandong Meng, and Kaiyu Huang
   Under review
   [pdf]
3. **Agent and Tool Search: Foundations, Techniques, and Open Challenges**
   Bin Wu, Hossein A. Rahmani, To Eun Kim, Arastun Mammadli, Shuofei Qiao, Xiao Fu, Varsha Ramineni, Xiaoyu Zhang, **Chuan Meng**, George Drayson, Anu Chowdhury, Jerome Ramos, Abdine Maiga, and Emine Yilmaz
   Under review
   [pdf]
4. **Re-Rankers as Relevance Judges**
   Chuan Meng, Jiqun Liu, Mohammad Aliannejadi, Fengran Mo, Jeff Dalton, and Maarten de Rijke
   Under review
   [pdf, code]
5. **Toward Exploring Mixed-Initiative Conversation Generation Based on Community Question Answering**
   Lili Lu, Pranav Kasela, Federico Ravenda, **Chuan Meng**, Gabriella Pasi, and Fabio Crestani
   TOIS (JIF 11.2, JCR Q1): ACM Transactions on Information Systems, 44(5), 1–29, 2026
   [pdf]
6. **Generative Retrieval with Few-shot Indexing**
   Arian Askari*, **Chuan Meng*** (co-first author), Mohammad Aliannejadi, Zhaochun Ren, Evangelos Kanoulas, and Suzan Verberne
   ECIR 2026 (CORE A): The 48th European Conference on Information Retrieval
   [pdf]
7. **Towards Adaptive Personalized Conversational Information Retrieval**
   Fengran Mo, Yuchen Hui, Yuxing Tian, Zhaoxuan Tan, **Chuan Meng**, Zhan Su, Kaiyu Huang, Jian-Yun Nie
   CIKM 2025 (CORE A): The 34th ACM International conference on Information and Knowledge Management
   [pdf]
8. **UniConv: Unifying Retrieval and Response Generation for Large Language Models in Conversations**
   Fengran Mo, Yifan Gao, **Chuan Meng**, Xin Liu, Zhuofeng Wu, Kelong Mao, Zhengyang Wang, Pei Chen, Zheng Li, Xian Li, Bing Yin, Meng Jiang
   ACL 2025 (CORE A*): The 63rd Annual Meeting of the Association for Computational Linguistics
   [pdf]
9. **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 (CORE A*): The 48th International ACM SIGIR Conference on Research and Development in Information Retrieval
   [pdf, code]
10. **Query Performance Prediction using Relevance Judgments Generated by Large Language Models**
    Chuan Meng, Negar Arabzadeh, Arian Askari, Mohammad Aliannejadi, and Maarten de Rijke
    TOIS (JIF 11.2, JCR Q1): ACM Transactions on Information Systems, 43(4), 1–35, 2025 (**Selected as one of five featured articles**)
    [pdf, code]
11. **SOLID: 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]

12. **Zero-Shot and Efficient Clarification Need Prediction in Conversational Search**
Lili Lu, **Chuan Meng**, Federico Ravenda, Mohammad Aliannejadi and Fabio Crestani
ECIR 2025 (CORE A): The 47th European Conference on Information Retrieval
[pdf, code]
13. **Improving the Re-Usability of Conversational Search Test Collections**
Zahra Abbasiantaeb, **Chuan Meng**, Leif Azzopardi and Mohammad Aliannejadi
ECIR 2025 (CORE A): The 47th European Conference on Information Retrieval
[pdf, code]
14. **Ranked List Truncation for Large Language Model-based Re-Ranking**
Chuan Meng, Negar Arabzadeh, Arian Askari, Mohammad Aliannejadi, and Maarten de Rijke.
SIGIR 2024 (CORE A*): The 47th International ACM SIGIR Conference on Research and Development in Information Retrieval
[pdf, code]
15. **Query Performance Prediction for Conversational Search and Beyond**
Chuan Meng
SIGIR 2024 (CORE A*): The 47th International ACM SIGIR Conference on Research and Development in Information Retrieval
[pdf]
16. **Expand, Highlight, Generate: RL-driven Document Generation for Passage Reranking**
Arian Askari, Mohammad Aliannejadi, **Chuan Meng**, Evangelos Kanoulas, and Suzan Verberne
EMNLP 2023 (CORE A*): The 2023 Conference on Empirical Methods in Natural Language Processing
[pdf, code]
17. **System Initiative Prediction for Multi-turn Conversational Information Seeking**
Chuan Meng, Mohammad Aliannejadi, and Maarten de Rijke
CIKM 2023 (CORE A): The 32nd ACM International Conference on Information and Knowledge Management
[pdf, code]
18. **Query Performance Prediction: From Ad-hoc to Conversational Search**
Chuan Meng, Negar Arabzadeh, Mohammad Aliannejadi, and Maarten de Rijke
SIGIR 2023 (CORE A*): The 46th International ACM SIGIR Conference on Research and Development in Information Retrieval
[pdf, code]
19. **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 (CORE A*): The 44th International ACM SIGIR Conference on Research and Development in Information Retrieval
[pdf]
20. **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 (CORE A*): The 44th International ACM SIGIR Conference on Research and Development in Information Retrieval
[pdf, code]
21. **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 (CORE A*): The 43rd International ACM SIGIR Conference on Research and Development in Information Retrieval
[pdf, code]

22. **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 (CORE A*): The Thirty-Fourth AAAI Conference on Artificial Intelligence.
[pdf, code]

ACADEMIC SERVICE

So far, I have organized 2 workshops (1 upcoming), chaired 2 conference sessions, served on the program committees of 13 major venues (including as a senior program committee member), reviewed for 3 journals, and served as a moderator for arXiv.

- Workshop organization:
  - **LongSeek: The First Workshop on Long-Horizon Information Seeking**
    Chuan Meng, Fengran Mo, Jinghan Zhang, Zhenrui Yue, Yan Wang, Jimin Huang, Chen Luo, Mohammad Aliannejadi, Michael Bendersky, and Jeff Dalton
    WSDM 2027: The 20th ACM International Conference on Web Search and Data Mining (upcoming)
    15–19 February 2027, Hong Kong
    [website]
  - **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
    6–10 April 2025, Lucca, Italy
    [paper, website]
- Session chair:
  - **ECIR 2026**: session "Reproducibility I: Recommender Systems", 30 March 2026, 14:30–15:30 [program]
  - **SIGIR 2025**: session "Machine Learning 1", 15 July 2025, 10:30–12:30 [program]
- Senior Program Committee member: CIKM 2026
- Program Committee member: ACL 2023, EMNLP 2023–2021, SIGIR 2026–2024, COLING 2025, 2022 & 2020, CIKM 2025–2022, The Web Conf 2026–2024, WSDM 2026–2022, SIGIR-AP 2026, ECIR 2026–2024, ICTIR 2025 & 2023, SIGKDD 2022, ECML/PKDD 2022–2021, AAAI 2021
- ACL Rolling Review (ARR) reviewer 2025
- Journal reviewer: Transactions on Information Systems (TOIS), Pattern Recognition, Information Processing and Management (IP&M)
- arXiv, Moderator (Computer Science), February 2026–present

TEACHING & SUPERVISION

- Tutorial organization: so far, I have organized 7 tutorials (1 upcoming), as the first speaker in 3 of them and the second speaker in the other 4.
  - **Agentic Search: Foundations, Optimization, and Long-Horizons**
    Chuan Meng, Litu Ou, Sean MacAvaney, and Jeff Dalton
    CIKM 2026: The 35th ACM International Conference on Information and Knowledge Management (upcoming)
    7 November 2026, Rome, Italy
    [website]
  - **Conversational Search: From Fundamentals to Frontiers in the Age of Agents**
    Chuan Meng, Fengran Mo, Mohammad Aliannejadi, Jeff Dalton, and Jian-Yun Nie

WWW 2026: The ACM Web Conference 2026
30 June 2026, Dubai, United Arab Emirates
[paper, slides, website]

- **Conversational Search: Foundations, Large Language Models, and Agents**
  Chuan Meng, Fengran Mo, Mohammad Aliannejadi, Jeff Dalton, and Jian-Yun Nie
  ECIR 2026: The 48th European Conference on Information Retrieval
  29 March–2 April 2026, Delft, The Netherlands
  [paper, slides, website]
- **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
  13–17 July 2025, Padua, Italy
  [paper, slides, website]
- **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
  10–14 March 2025, Hanover, Germany
  [paper, 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
  9–12 December 2024, Tokyo, Japan
  [paper, 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
  24–28 March 2024, Glasgow, UK
  [paper, slides]

- Lecturing: so far, I have delivered 3 lectures (1 course lecture and 2 guest lectures) in the United Kingdom, the United States, and the Netherlands.
  - **Conversational Search: From Fundamentals to Frontiers in the Agent Era** (guest lecture, about **50** MSc and final-year undergraduate students), The University of Edinburgh, March 2026
    Host: Alexandra Birch
    [slides]
  - **Conversational Search: From Fundamentals to Frontiers in the LLM Era** (guest lecture, about **40** undergraduate students), University of Massachusetts Amherst, October 2025
    Host: Razieh Negin Rahimi
    [slides]
  - **Recommender Systems** (course lecture, about **50** students), University of Amsterdam, June 2025
    Course design and delivery of the lecture "Sequential and Large Language Model-based Recommender Systems"
    [slides]
- Teaching assistance:
  - **Information Retrieval** (about **60** students), University of Amsterdam, 2022–2023; project design and grading
  - **Information Retrieval** (about **60** students), Shandong University, 2020; assignment and project design, and grading
  - **Natural Language Processing** (about **70** students), Shandong University, 2019; assignment and project design, and grading

- PhD mentoring:
  - Paul Owoicho, The University of Edinburgh, with Dr. Jeff Dalton
  - Lili Lu, Università della Svizzera italiana (USI), with Prof. dr. Fabio Crestani
- Student support training: completed the Scotland's Mental Health First Aid (SMHFA) course, Public Health Scotland, 27–28 October 2026

INVITED TALKS

So far, I have delivered 10 invited talks in academia (the Royal Society, UCL, King's College London, the University of Glasgow, the University of Sheffield, and the China Conference on Information Retrieval) and industry (Amazon in Seattle and London, and Objective, Inc.).

- **The Role of Information Retrieval in Deep Research**
  16 August 2026, Young Scholars Forum at the 32nd China Conference on Information Retrieval (CCIR 2026)
  Host: Information Retrieval Technical Committee, Chinese Information Processing Society of China
  [slides]
- **The Role of Information Retrieval in Deep Research**
  24 June 2026, King's College London (KCL)
  Host: Yulan He, professor at King's College London
- **Revisiting Text Ranking in Deep Research**
  5 March 2026, University of Sheffield
  Host: Nikolaos Aletras, professor at the University of Sheffield
- **Revisiting Text Ranking in Deep Research**
  3 March 2026, the Royal Society
- **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 November 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]

ADMINISTRATIVE ACTIVITIES

- Manager for the LinkedIn account of IRLab (Information Retrieval Lab, University of Amsterdam), 2025
- Webmaster for the IRLab website, University of Amsterdam, 2023–2024
- Chair for internal seminars at IRLab, University of Amsterdam, 2023
- Lead organizer of the IRLab BBQ event, University of Amsterdam, 2023

RESEARCH FUNDING PROPOSALS

I have contributed to the methodology design of 3 national research funding proposals in China.

- **National Key Research and Development Program of China** (Project No.: 2020YFB1406700)
  Contributor (methodology design)
  Development of an AI-assisted writing robot system based on news reporting scenarios
- **National Natural Science Foundation of China (NSFC)** (Project No.: 61972234)
  Contributor (methodology design)
  Research on Explainable Medical Health Question-Answering Technology Based on Multi-Source Heterogeneous Data Fusion
- **National Natural Science Foundation of China (NSFC)** (Project No.: 62072279)
  Contributor (methodology design)
  Research on Conversational Recommendation Systems and Functional Enhancements Based Primarily on Implicit Feedback Data

AWARDS & SCHOLARSHIPS

- Ranked No. 1 in international evaluations:
  - **1st place** among 84 open-source agent systems from 9 countries (below 100B parameters), BrowseComp-Plus deep research leaderboard, organised by the University of Waterloo, Carnegie Mellon University, and others, 2026
  - **1st place** in document retrieval among 24 systems from 7 countries, TREC Interactive Knowledge Assistance Track (iKAT), US National Institute of Standards and Technology, 2023
- Scholarships and 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

My open-source code and data have attracted over **800** GitHub stars across all my repositories and over **14,000** Hugging Face downloads, and my code has been reused by companies including Snowflake and Dataminr.

Representative resources I have curated include:

- a resource repository on Hugging Face (**over 14,000 downloads**) providing the passage corpus, pre-built retriever indexes, and agent execution trajectories for deep research.
- a code repository (**over 200 stars**) providing scripts for text ranking in deep research, within a Python/PyTorch framework.
- a code repository (**over 100 stars**) providing scripts for fine-tuning open-source LLMs to generate relevance judgments, within a Python/PyTorch framework.

- a code repository (**over 110 stars**) providing a comprehensive implementation of query performance prediction (QPP) methods, within a unified Python/PyTorch framework.
- a code repository (**over 50 stars**) offering a comprehensive implementation of ranked list truncation methods, within a unified Python/PyTorch framework.
- a paper reading list (**over 250 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

Dr. Jeff Dalton
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