Yuxiang Nie

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Education

- **Department of Computer Science & Engineering, The Hong Kong University of Science and Technology** — Hong Kong, China
  PhD Student, Computer Science — *Sept 2023 - present*

- **School of Computer Science & Technology, Beijing Institute of Technology** — Beijing, China
  Master of Science in Engineering, Computer Science; GPA: 3.94/4.00 — *Sept 2020 - June 2023*

- **School of Computer Science & Technology, Beijing Institute of Technology** — Beijing, China
  Bachelor of Engineering, Computer Science; GPA: 3.89/4.00 (Rank: 3/193) — *Sept 2016 - June 2020*

Publications

- **Yuxiang Nie**[*], Sunan He[*], Yequan Bie[*], Yihui Wang, Zhixuan Chen, Shu Yang, and Hao Chen. ConceptCLIP: Towards Trustworthy Medical AI via Concept-Enhanced Contrastive Language-Image Pre-training. *Nature Biomedical Engineering*, 2026. (Accepted in principle; [*] equal contribution)
- Sunan He[*], **Yuxiang Nie**[*], Hongmei Wang, Shu Yang, Yihui Wang, Zhiyuan Cai, Zhixuan Chen, Yingxue Xu, Linshan Wu, Ngai Shing Cheng, Luyang Luo, Huiling Xiang, Xi Lin, Mingxiang Wu, Yifan Peng, George Shih, Ziyang Xu, Xian Wu, Qiong Wang, Ronald Cheong Kin Chan, Varut Vardhanabhuti, Xiaohui Duan, Winnie Chiu Wing Chu, Yefeng Zheng, Pranav Rajpurkar, Kang Zhang, and Hao Chen. GSCo: Towards Generalizable AI in Medicine via Generalist–Specialist Collaboration. *Nature Biomedical Engineering*, 2026. ([*] equal contribution)
- Yuting He, Fuxiang Huang, Xinrui Jiang, **Yuxiang Nie**, Minghao Wang, Jiguang Wang, and Hao Chen. Foundation Model for Advancing Healthcare: Challenges, Opportunities and Future Directions. *IEEE Reviews in Biomedical Engineering*, 2024
- **Yuxiang Nie**, Heyan Huang, Xian-Ling Mao, and Lizi Liao. Mix-Initiative Response Generation with Dynamic Prefix Tuning. *NAACL*, 2024
- Xiao Zhang[*], Heqi Zheng[*], **Yuxiang Nie**[*], Heyan Huang, and Xian-Ling Mao. SciMRC: Multi-perspective Scientific Machine Reading Comprehension. *COLING*, 2024. ([*] equal contribution)
- **Yuxiang Nie**, Heyan Huang, Wei Wei, and Xian-Ling Mao. AttenWalker: Unsupervised Long-Document Question Answering via Attention-based Graph Walking. *Findings of ACL*, 2023
- Huy Dao, Lizi Liao, Dung Le, and **Yuxiang Nie**. Reinforced Target-Driven Conversational Promotion. *EMNLP*, 2023
- **Yuxiang Nie**, Heyan Huang, Wei Wei, and Xian-Ling Mao. Capturing Global Structural Information in Long Document Question Answering with Compressive Graph Selector Network. *EMNLP*, 2022
- **Yuxiang Nie**, Heyan Huang, Zewen Chi, and Xian-Ling Mao. Unsupervised Question Answering via Answer Diversifying. *COLING*, 2022
- Yong Hu, Heyan Huang, Tian Lan, Xiaochi Wei, **Yuxiang Nie**, Jiarui Qi, Liner Yang, and Xian-Ling Mao. Multi-task Learning for Low-resource Second Language Acquisition Modeling. *APWeb-WAIM*, 2020

Projects

- **Conversational Recommendation System** — Singapore (remotely)
  Advisor: Lizi Liao — *Sept. 2022 - June. 2023*
  - Designed a conversational recommendation system with better human engagement and recommendation accuracy.
  - Explored potential discourse patterns to model dialogues and proactively make recommendations.
  - Analyzed the related datasets and try to find out shared patterns among these datasets.
  - Wrote the paper "Initiative-aware Response Generation with Dynamic Prefix Tuning" (accepted to NAACL 2024) and the paper "Reinforced Target-Driven Conversational Promotion" (accepted to EMNLP 2023).
- **Scientific Paper Question Answering System** — Beijing, China
  Advisor: Xianling Mao — *May 2022 - Jan. 2023*
  - Constructed a scientific paper machine reading comprehension dataset with annotators from various backgrounds.
  - Designed a long document QA data construction method without human supervision.
  - Wrote the papers "SciMRC: Multi-perspective Scientific Machine Reading Comprehension" (accepted to COLING 2024) and "AttenWalker: Unsupervised Long-Document Question Answering via Attention-based Graph Walking" (accepted to NAACL 2024).
- **Long Document Question Anwering System** — Beijing, China
  Advisor: Xian-Ling Mao — *Nov. 2021 - June 2022*
  - Proposed an evidence selection model to extract evidence pieces for a long document question answering system.
  - Applied a compressive graph network to capture the long-range information in the evidence selection system.

- Constructed a long document question answering dataset (based on HotpotQA) to evaluate the system.
- Designed experiments to demonstrate the effectiveness of the proposed system over previous methods on two datasets.
- Wrote the paper "Capturing Global Structural Information in Long Document Question Answering with Compressive Graph Selector Network" (accepted to EMNLP 2022).

- **Unsupervised Question Anwering System** Beijing, China
  Advisor: Xian-Ling Mao *Sept. 2021 - May 2022*
  - Proposed an unsupervised question answering system to tackle answer types beyond named entities in the low-resource question answering setting.
  - Applied a simple answer span extension algorithm, an answer-type dependent data augmentation method and a denoising filter to solve the problem.
  - Constructed a question answering dataset with diverse answers without supervision signals.
  - Designed extensive experiments to demonstrate the better performance of the proposed system over previous methods on five benchmark datasets.
  - Wrote the paper "Unsupervised Question Answering via Answer Diversifying" (accepted to COLING 2022).
- **Academic Search Engine - HammerScholar** Beijing, China
  Advisor: Xian-Ling Mao *Jan. 2021 - May 2021*
  - Constructed a search engine for academic information seeking.
  - Connected data flow between the academic dataset and the academic search indices.
  - Built a text-to-video search engine to seek oral videos (video format) via video content (text format).
  - Associated each paper with its blogs (if any) in the search engine to help visitors better understand the paper.

Selected Awards

- National Scholarship, Ministry of Education of the People's Republic of China (Top 2%) 2018, 2019
- First Class Scholarship, Beijing Institute of Technology (Top 5%) 2018, 2019, 2020
- Honorable Mention, Mathematical Contest in Modeling (MCM) 2018
- Outstanding Reviewer Award, EACL 2026 2026

Academic Service

- Journal Reviewer, *IEEE/ACM Transactions on Audio, Speech, and Language Processing* (TASLP)
- Journal Reviewer, *IEEE Transactions on Neural Networks and Learning Systems* (TNNLS)
- Conference Reviewer, *Empirical Methods in Natural Language Processing* (EMNLP) 2023
- Reviewer, ACL Rolling Review (ARR) 2023–2026

Skills

- **Programming** Python, C++, Java, Matlab, Latex, HTML
- **Frameworks** Pytorch, TensorFlow, Scikit-learn, NLTK, SpaCy, Flask, Matplotlib
- **Platforms** Linux, Windows

Languages

- **Chinese (Mandarin)** Native Fluency
- **English** Advanced Proficiency; TOEFL: 97, GRE: 326+3.0