

周宝航

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教学科研简介

周宝航，男，获南开大学计算机科学与技术博士学位，现为天津工业大学讲师。主要研究方向是自然语言处理、大语言模型、多模态数据挖掘等。近五年在ACL、SIGIR、ACM WebConf、ACM MM、AAAI、IEEE TASLP等相关领域顶级会议和期刊上发表学术论文30余篇。获得国内外专利1项，并参与多项科研项目，包括国家自然科学基金联合重点项目、面上项目、重点研发计划等。担任ACL、ACM WebConf、AAAI、EMNLP、TKDE等自然语言处理、数据挖掘领域顶级会议和期刊的审稿人。

研究生招生：硕士生1-2人/年

研究方向：大语言模型、自然语言处理、多模态数据挖掘等

学习经历

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|-----------------------------|-------------------|
| (1). 博士，计算机科学与技术，南开大学（中国） | 2021.09 – 2025.06 |
| (2). 硕博连读，计算机科学与技术，南开大学（中国） | 2019.09 – 2021.06 |
| (3). 学士，物联网工程，江南大学（中国） | 2015.09 – 2019.06 |

工作经历

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|---------------------|--------------|
| (1). 讲师，软件学院，天津工业大学 | 2025.07 – 至今 |
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主讲课程

大数据导论

代表性论文

期刊论文：

- [1] **Baohang Zhou**, Ying Zhang, Kehui Song, Xuhui Sui, Yu Zhao, Xiaojie Yuan. ZS-MNET: A zero-shot learning based approach to multimodal named entity typing [J]. Neural Networks, 2025, 186: 107264. (CCF-B, SCI二区)
- [2] Haoze Zhu, **Baohang Zhou**（通讯作者）, Ziyu Lu, Xuhui Sui, Yu Zhao, Ying Zhang, Xiaojie Yuan. Coarse-to-fine multimodal prototype network for few-shot multimodal relation extraction [J]. Knowledge Based Systems 330: 114569 (2025). (CCF-C, SCI一区)

- [3] Ying Zhang, **Baohang Zhou**, Xiaoke Ding, Jiawei Ouyang, Xiangrui Cai, Jinyang Gao, Xiaojie Yuan. Adversarially learned one-class novelty detection with confidence estimation [J]. Information Sciences, 2021, 552: 48-64. (CCF-B, SCI二区)
- [4] Ying Zhang, **Baohang Zhou**, Xiangrui Cai, Wenya Guo, Xiaoke Ding, Xiaojie Yuan. Missing Value Imputation in Multivariate Time Series with End-to-End Generative Adversarial Networks [J]. Information Sciences, 2021, 551: 67-82. (CCF-B, SCI二区)
- [5] Ying Zhang, Xuhui Sui, Kehui Song, **Baohang Zhou**, Wenya Guo, Xiaojie Yuan. Lifelong Learning for Entity Linking [J]. IEEE Transactions on Audio, Speech and Language Processing, 2025, 33: 2471-2484. (CCF-B, SCI二区)
- [6] Xuhui Sui, Ying Zhang, Yu Zhao, **Baohang Zhou**, Xinying Qian, Wenya Guo, Xiaojie Yuan. SMIR: Span-based multi-grained information refinement for joint multimodal entity-relation extraction [J]. Inf. Process. Manag. 63(5): 104687 (2026) (CCF-B, SCI一区)
- [7] Ying Zhang, Yu Zhao, Xuhui Sui, **Baohang Zhou**, Xiangrui Cai, Li Shen, Xiaojie Yuan, Dacheng Tao. Hyper-modal Imputation Diffusion Embedding with Dual-Distillation for Federated Multimodal Knowledge Graph Completion [J]. IEEE Transactions on Multimedia, 2026. (CCF-A, SCI一区)

会议论文:

- [1] **Baohang Zhou**, Kehui Song, Rize Jin, Yu Zhao, Xuhui Sui, Xinying Qian, Xingyue Guo, Ying Zhang. Hyperbolic Multimodal Generative Representation Learning for Generalized Zero-Shot Multimodal Information Extraction [C]. WWW. 2026: 7125-7134. (CCF-A)
- [2] **Baohang Zhou**, Ying Zhang, Yu Zhao, Xuhui Sui, Xiaojie Yuan. Multimodal Graph-Based Variational Mixture of Experts Network for Zero-Shot Multimodal Information Extraction [C] // WWW. 2025: 4823-4831. (CCF-A)
- [3] **Baohang Zhou**, Xiangrui Cai, Ying Zhang, Xiaojie Yuan. An End-to-End Progressive Multi-Task Learning Framework for Medical Named Entity Recognition and Normalization [C] // ACL. 2021: 6214-6224. (CCF-A)
- [4] **Baohang Zhou**, Xiangrui Cai, Ying Zhang, Wenya Guo, Xiaojie Yuan. MTAAL: Multi-Task Adversarial Active Learning for Medical Named Entity Recognition and Normalization [C] // AAAI. 2021, 35(16): 14586-14593. (CCF-A)
- [5] **Baohang Zhou**, Ying Zhang, Kehui Song, Wenya Guo, Guoqing Zhao, Hongbin Wang, and Xiaojie Yuan. A Span-based Multimodal Variational Autoencoder for Semi-supervised Multimodal Named Entity Recognition [C] // EMNLP. 2022: 6293-6302. (CCF-B)
- [6] **Baohang Zhou**, Ying Zhang, Kehui Song, Hongru Wang, Yu Zhao, Xuhui Sui, Xiaojie Yuan. MCIL: Multimodal Counterfactual Instance Learning for Low-resource Entity-based Multimodal Information Extraction [C] // LREC-COLING. 2024: 11101-11110. (CCF-B)
- [7] Hongru Wang*, **Baohang Zhou***, Zhengkun Zhang, Yiming Du, David Ho, Kam-Fai Wong. M3Sum: A Novel Unsupervised Language-guided Video Summarization [C]. ICASSP. 2024: 4140-4144. (CCF-B, Oral)
- [8] **Baohang Zhou**, Zezhong Wang, Lingzhi Wang, Hongru Wang, Ying Zhang, Kehui Song, Xuhui Sui, Kam-Fai Wong. DPDLLM: A Black-box Framework for Detecting Pre-training Data from Large Language Models [C] // ACL Findings. 2024: 644-653. (CCF-A Findings)
- [9] Ying Zhang, **Baohang Zhou**, Kehui Song, Xuhui Sui, Guoqing Zhao, Ning Jiang, and Xiaojie Yuan. PM2F2N: Patient Multi-view Multi-modal Feature Fusion Networks for Clinical Outcome Prediction [C] // EMNLP Findings. 2022: 985-994. (CCF-B Findings)
- [10] Yu Zhao, Ying Zhang, **Baohang Zhou**, Xinying Qian, Kehui Song, Xiangrui Cai. Contrast then Memorize: Semantic Neighbor Retrieval-Enhanced Inductive Multimodal Knowledge Graph Completion [C] // SIGIR. 2024: 102-111. (CCF-A)
- [11] Hongru Wang, Boyang Xue, **Baohang Zhou**, Tianhua Zhang, Cunxiang Wang, Huimin Wang, Guanhua Chen, Kam-Fai Wong. Self-DC: When to Reason and When to Act? Self Divide-and-Conquer for Compositional Unknown Questions [C] // NAACL. 2025: 6510-6525. (CCF-B)
- [12] Xuhui Sui, Ying Zhang, Yu Zhao, **Baohang Zhou**, Xiaojie Yuan. Multimodal Knowledge Graph Error Detection with Disentanglement VAE and Multi-Grained Triplet Confidence [C] // WWW. 2025: 3481-3491. (CCF-A)
- [13] Yu Zhao, Ying Zhang, Xuhui Sui, **Baohang Zhou**, Haoze Zhu, Jeff Z Pan, Xiaojie Yuan. Dark Side of Modalities: Reinforced Multimodal Distillation for Multimodal Knowledge Graph Reasoning [C] // ACM MM. 2025: 2506-2515. (CCF-A)
- [14] Ying Zhang, Xingyue Guo, Yu Zhao, Xuhui Sui, **Baohang Zhou**, Xinying Qian, Xiaojie Yuan. Grow-on-Demand: Sparse and Adaptive Expert Expansion for Continual Instruction Tuning. AAAI 2026: 28474-28482. (CCF-A)

[15] Xinying Qian, Ying Zhang, Xuhui Sui, Yu Zhao, **Baohang Zhou**, Jeff Z. Pan. Beyond Timestamps: Bridging Forward and Backward Reasoning in Temporal Numerical and Relational Understanding. ACL (1) 2026: 7301-7321. (CCF-A, Oral)

教学科研项目

- (1). 2019.09-2023.12, 跨模态医疗分析推理技术与系统, 2018年度科技创新2030—“新一代人工智能” (重大项目) (2018AAA0102100)。
- (2). 2023.01-2026.12, 多模态软关联知识图谱关键技术研究, 国家自然科学基金面上项目 (62272250)。
- (3). 2023.01-2026.12, 面向跨模态大数据智能标注的机器学习理论和方法, 国家自然科学基金联合重点项目 (U22B2048)。
- (4). 2020.08-2021.05, 基于多任务学习的对话冲突检测, 南开大学校企合作 (企业: 马上消费金融)。
- (5). 2023.06 至 2023.12, 无监督视频摘要算法研究, 香港中文大学校企合作 (企业: FindSolution AI)。