Changzhi Sun

Tel: (+86) 139-1838-2480 | czsun.cs@gmail.com | https://www.czsun.site

EDUCATION

East China Normal University Shanghai, China
Ph.D., Computer Science *Sep. 2014 – Dec. 2019*

- Dissertation: Joint Entity Relation Extraction with Deep Learning
- Advisor: Prof. Yuanbin Wu and Prof. Shiliang Sun

Anhui Normal University Wuhu, China
B.S., Computer Science *Sep. 2010 – Jun. 2014*

EMPLOYMENT

Institute of Artificial Intelligence (TeleAI), China Telecom Oct. 2024 – Present
Research Scientist *Shanghai, China*

- Complex reasoning, tool learning and embodied AI

LinGang National Lab Aug. 2023 – Oct. 2024
Assistant Researcher *Shanghai, China*

- LLM and AI assisted drug discovery

ByteDance AI Lab Jun. 2020 – Jun. 2023
NLP Researcher *Shanghai, China*

- Deep reasoning (logical reasoning, math reasoning, analogical reasoning)

Microsoft Research Asia Dec. 2018 – May. 2019
Research Intern *Beijing, China*

- Topic: Joint type inference on entities and relations
- Mentor: Dr. Yeyun Gong and Dr. Nan Duan

PUBLICATIONS

[*: equal contribution; †: corresponding authors; underline indicates students working with me.]

UNDER REVIEW

[6] Zhe Fang, Zhe Chen, Wenhao Tian, LiyunMao, Honglin Li, **Changzhi Sun**, Man Lan. "SciParse: Neural Optical Parsing for Scientific Documents". Long paper, submitted to AAAI 2025.

[5] Jiazheng Xu*, **Changzhi Sun***, Kai Zhang, Qiaoyu Hu, Liang He, Honglin Li, Xuhong Qian. "Molecular Conformation Generation Model Based on Graph Mixup". Long paper, submitted to Nature Machine Intelligence 2024 August

[4] Qiaoyu Hu*, **Changzhi Sun***, Jiazheng Xu, Honglin Li. "Target-aware 3D Molecular Generation Based on Guided Equivariant Diffusion". Long paper, submitted to Nature Machine Intelligence 2024 August

[3] Nuowei Liu, **Changzhi Sun**†, Tao Ji, Jianxin Tang, Junfeng Tian, Yuanbin Wu†, Man Lan†, Honglin Li†. "Enhancing LLMs' Understanding of Proteins via Multimodal Sequence Representations". Long paper, submitted to NeurIPS 2024.

[2] Wenjing Yue, Xiaoling Wang, Wei Zhu, Ming Guan, Huanran Zheng, Pengfei Wang, **Changzhi Sun**, Xin Ma. "TCMBench: A Comprehensive Benchmark for Evaluating Large Language Models in Traditional Chinese Medicine". In: Arxiv 2406.01126

[1] Yijun Wang*, **Changzhi Sun***, Yuanbin Wu, Zhao Zhou, Lei Li and Junchi Yan. "Leveraging High-order Interactions for Unified Entity Relation Extraction". In: Arxiv 2305.04297

REFEREED JOURNAL PAPERS

[J1] Yihan Mei, Xinyu Wang, **Changzhi Sun**, Dell Zhang, Xiaoling Wang. "Multi-Label Out-of-Distribution Detection with Spectral Normalized Joint Energy". In: *World Wide Web Journal*. 2025.

REFEREED CONFERENCE PAPERS

[C26] Xinyu Wang*, **Changzhi Sun***, Lian Chen, Yuanbin Wu, Dell Zhang, Xiaoling Wang, Xuelong Li. "Logic-Regularized Verifier Elicits Reasoning from LLMs". In: *the 63th Annual Meeting of the Association for Computational Linguistics (ACL)* Aug. 2025.

[C24] Yuxiang Song, Zhaoguang Long, Man Lan, **Changzhi Sun**, Aimin Zhou, Yuefeng Chen, Hao Yuan, Fei Cao. Semantic Attention and LLM-based Layout Guidance for Text-to-Image Generation. In: *International Conference on Acoustics, Speech, and Signal Processing (ICASSP).* Apr. 2025.

[C23] Zhe Chen, Zhe Fang, Wenhao Tian, Zhaoguang Long, **Changzhi Sun**, Honglin Li, Man Lan. "ReactGPT: Understanding and Generation of Chemical Reactions via In-Context Tuning". In: *the 39th Annual AAAI Conference on Artificial Intelligence (AAAI).* Feb. 2025.

[C22] Yanting Liu, Tao Ji, **Changzhi Sun**, Yuanbin Wu, Xiaoling Wang. "Generation with Dynamic Vocabulary". In: *the Conference on Empirical Methods in Natural Language Processing (EMNLP).* Nov. 2024.

[C21] Yufang Liu, Tao Ji, **Changzhi Sun**, Yuanbin Wu, Aimin Zhou. "Investigating and Mitigating Object Hallucinations in Pretrained Vision-Language (CLIP) Models". In: *the Conference on Empirical Methods in Natural Language Processing (EMNLP).* Nov. 2024.

[C20] Nuowei Liu, Xinhao Chen, Hongyi Wu, **Changzhi Sun**, Man Lan, Yuanbin Wu, Xiaopeng Bai, Shaoguang Mao, Yan Xia. "CERD: A Comprehensive Chinese Rhetoric Dataset for Rhetorical Understanding and Generation in Essays". In: *the Conference on Empirical Methods in Natural Language Processing (EMNLP). - Findings.* Nov. 2024.

[C19] Siyu Yuan, Jiangjie Chen, **Changzhi Sun**, Jiaqing Liang, Deqing Yang, Yanghua Xiao. "AnalogyKB: Unlocking Analogical Reasoning in Language Models with A Million-scale Knowledge Base". In: *the 62th Annual Meeting of the Association for Computational Linguistics (ACL)* Aug. 2024.

[C18] Yuxiang Song, Yuxuan Zheng, Shangqing Zhao, Shu Liu, Xinlin Zhuang, Zhaoguang Long, **Changzhi Sun**, Aimin Zhou, Man Lan. "A Lightweight and Effective Multi-View Knowledge Distillation Framework for Text-Image Retrieval". In: *International Joint Conference on Neural Networks (IJCNN).* Jun. 2024.

[C17] Xinhao Chen, Chong Yang, **Changzhi Sun**, Man Lan, Aimin Zhou. "From Coarse to Fine: A Distillation Method for Fine-grained Emotion-Causal Span Pair Extraction in Conversation". In: *the 39th Annual AAAI Conference on Artificial Intelligence (AAAI).* Feb. 2024.

[C16] Jiangjie Chen, Rui Xu, Wenxuan Zeng, **Changzhi Sun**[†], Lei Li, Yanghua Xiao[†]. "Factual Error Correction via Iterative Constrained Editing". In: *Proceedings of the AAAI Conference on Artificial Intelligence (AAAI).* Feb. 2023.

[C15] Jiangjie Chen, Rui Xu, Ziquan Fu, Wei Shi, Zhongqiao Li, Xinbo Zhang, **Changzhi Sun**[†], Lei Li, Yanghua Xiao[†], Hao Zhou. "E-KAR: A Benchmark for Rationalizing Natural Language Analogical Reasoning". In: *the 60th Annual Meeting of the Association for Computational Linguistics (ACL) - Findings.* May 2022.

[C14] Yufang Liu, Ziyin Huang, Yijun Wang, **Changzhi Sun**, Man Lan, Yuanbin Wu, Xiaofeng Mou, Jian Tang. "Few Clean Instances Help Denoising Distant Supervision". In: *the 29th International Conference on Computational Linguistics (COLING).* Oct. 2022

[C13] Siyin Wang, Jie Zhou, **Changzhi Sun**, Junjie Ye, Tao Gui, Qi Zhang, Xuanjing Huang. "Causal Intervention Improves Implicit Sentiment Analysis". Long paper, COLING 2022 In: *the 29th International Conference on Computational Linguistics (COLING).* Oct. 2022

[C12] Jiangjie Chen, Qiaoben Bao, **Changzhi Sun**, Xinbo Zhang, Jiaze Chen, Hao Zhou, Yanghua Xiao, Lei Li. "Logic-Regularized Reasoning for Interpretable Fact Verification". In: *Proceedings of the AAAI Conference on Artificial Intelligence (AAAI).* Feb. 2022

[C11] Yijun Wang, **Changzhi Sun**[†], Yuanbin Wu[†], Zhao Zhou, Lei Li, Junchi Yan[†]. "ENPAR:Enhancing Entity and Entity Pair Representations for Joint Entity Relation Extraction". In: *Proceedings of European Chapter of the Association for Computational Linguistics (EACL).* Apr. 2021.

[C10] Jie Zhou, Yuanbin Wu, **Changzhi Sun**, Liang He. "Is "hot pizza" Positive or Negative? Mining Target-aware Sentiment Lexicons". In: *Proceedings of European Chapter of the Association for Computational Linguistics (EACL).* Apr. 2021.

[C9] <u>Dongyu Ru</u>, **Changzhi Sun**†, Jiangtao Feng, Lin Qiu, Hao Zhou, Weinan Zhang†, Yong Yu, Lei Li. "Learning Logic Rules for Document-Level Relation Extraction". In: *the Conference on Empirical Methods in Natural Language Processing (EMNLP)*. Nov. 2021.

[C8] **Changzhi Sun***, Xinbo Zhang*, Jiangjie Chen, Chun Gan, Yuanbin Wu, Jiaze Chen, Hao Zhou, Lei Li. "Probabilistic Graph Reasoning for Natural Proof Generation". In: *the 59th Annual Meeting of the Association for Computational Linguistics (ACL) - Findings.* Aug. 2021

[C7] <u>Yijun Wang</u>*, **Changzhi Sun***, Yuanbin Wu, Zhao Zhou, Lei Li, Junchi Yan. "UniRE: A Unified Label Space for Entity Relation Extraction". In: *the 59th Annual Meeting of the Association for Computational Linguistics (ACL).* Aug. 2021.

[C6] <u>Yijun Wang</u>, **Changzhi Sun**, Yuanbin Wu, Junchi Yan, Peng Gao, Guotong Xie. "Pre-training Entity Relation Encoder with Intra-span and Inter-span Information". In: *the Conference on Empirical Methods in Natural Language Processing (EMNLP).* Nov. 2020.

[C5] Tianyang Zhao, Haoyan Liu, Qianhui Wu, **Changzhi Sun**, Dongdong Zhan, Zhoujun Li. "BiGCNN:Bidirectional Gated Convolutional Neural Network for Chinese Named Entity Recognition". In: *the 25th International Conference on Database Systems for Advanced Applications (DASFAA).* Sep. 2020.

[C4] **Changzhi Sun**, Yeyun Gong, Yuanbin Wu, Ming Gong, Daxin Jiang, Man Lan, Shiliang Sun, Nan Duan. "Joint Type Inference on Entities and Relations via Graph Convolutional Networks". In: *the 57th Annual Meeting of the Association for Computational Linguistics (ACL).* July. 2019.

[C3] **Changzhi Sun**, Yuanbin Wu. "Distantly Supervised Entity Relation Extraction with Adapted Manual Annotations". In: *the 33rd AAAI Conference on Artificial Intelligence (AAAI).* Jan. 2019.

[C2] **Changzhi Sun**, Yuanbin Wu, Man Lan, Shiliang Sun, Wenting Wang, Kuang-Chih Lee, Kewen Wu. "Extracting Entities and Relations with Joint Minimum Risk Training". In: *the Conference on Empirical Methods in Natural Language Processing (EMNLP).* Oct. 2018.

[C1] **Changzhi Sun**, Yuanbin Wu, Man Lan, Shiliang Sun, Qi Zhang. "Large-scale Opinion Relation Extraction with Distantly Supervised Neural Network". In: *Proceedings of European Chapter of the Association for Computational Linguistics (EACL).* Apr. 2017.

PATENTS

[P4] **Changzhi Sun**, Dongyu Ru. "Method, device, equipment, and medium for relation extraction". Pat. CN2021111612054. Sep. 2021

[P3] **Changzhi Sun**, Xinbo Zhang, Hao Zhou, Lei Li. "Information processing method, device, and electronic equipment based on natural language inference". Pat. CN2021107446583. Jul. 2021

[P2] Yijun Wang, **Changzhi Sun**, Hao Zhou, Lei Li. "Information acquisition method and apparatus, device, and medium ". Pat. CN2021107620486. Jul. 2021. (Pat. US20240273295A1. Jul. 2022)

[P1] Xinbo Zhang, Jiangjie Chen, Qiaoben Bao, **Changzhi Sun**, Jiaze Chen, Hao Zhou, Yanghua Xiao, Lei Li. "Method, device, and apparatus for verifying veracity of statement, and medium". Pat. CN2021113566258. Nov. 2021. (Pat. US20240296339A1. Nov. 2022)

PROFESSIONAL SERVICE

ORGANIZERS:

- Organizer for 2014 China Conference on Knowledge Graph and Semantic Computing. Task: Assessment of Understanding and Reasoning Abilities in Traditional Chinese Medicine. 407 teams. (Hosted by ECNU & FDU & SHUTC)

PROGRAM COMMITTEE:

- ARR, ACL, NeurIPS, ICML, ICLR, EMNLP, NAACL, AAAI, EACL, COLING, NLPCC.

JOURNAL REVIEWER:

- CL

STUDENTS ADVISING

1. Jingyang Chen (intern at TeleAI, FDU Ph.D, Feb. 2025 - present)
2. Haolun Wu (intern at TeleAI, ECNU master, Oct. 2024 - present)
3. Jianhong Pang (intern at TeleAI, FDU master, May 2025 - present)
4. Yihua Wang (intern at TeleAI, USTC Ph.D, Feb. 2025 - present)
5. Nuowei Liu (ECNU master, Jul. 2023 - present)
6. Xinyu Wang (intern at TeleAI, ECNU Ph.D, Nov. 2024 - Jul. 2025)
7. Yihan Mei (intern at TeleAI, ECNU master, Nov. 2024 - Feb. 2025)
8. Jianxin Tang (ECNU Ph.D, Jul. 2023 - Oct. 2024)
9. Lingfeng Chen (ECNU Ph.D, Jul. 2023 - Oct. 2024)
10. Daohong Gong (ShanghaiTech Ph.D, Jul. 2023 - Oct. 2024)
11. Jiangjie Chen (intern at ByteDance, FDU Ph.D $rightarrow$ ByteDance, Jul. 2021 - Jun. 2023)
12. Xuantao Lu (intern at ByteDance, FDU master → Xiaohongshu, Mar. 2022 - Jun. 2023)
13. Haoran Li (intern at ByteDance, HKUST Ph.D, Mar. 2022 - Aug. 2022)
14. Liping Yuan(intern at ByteDance, FDU master → ByteDance, Mar. 2022 - Dec. 2022)
15. Chi Han (intern at ByteDance, UIUC Ph.D, Jan. 2021 - Aug. 2021)
16. Dongyu Ru (intern at ByteDance, SJTU master → Amazon, Jan. 2021 - Jan. 2022)
17. Yijun Wang (intern at ByteDance, SJTU master → Tencent, Mar. 2021 - Dec. 2022)
18. Runxi Xu (intern at ByteDance, PKU master → ByteDance, Sep. 2020 - Feb. 2021)