

Duzhen Zhang

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EDUCATION

Institute of Automation, Chinese Academy of Sciences (CASIA)

Ph.D. in School of Artificial Intelligence

Sep 2019 – Jun 2024

- Adviser: Prof. Bo Xu (the director of CASIA), Prof. Tielin Zhang
- Focus:
 - (1) Emotion Analysis in Conversational Systems (Paper [1][10][11][12]);
 - (2) Brain-inspired Intelligence, Spiking Neural Networks (Paper [4][5][13]);
 - (3) Continual/Incremental/Lifelong Learning
 - (3-1) Continual Learning in Information Extraction (Paper [3][6][7][8][9][16][17][19]);
 - (3-2) Continual Learning in Large Language Models (Paper [15][18][20]);
 - (4) Multi-Modal Learning, Multi-Modal Large Language Models (Paper [2][14]);

Shandong University (SDU, Jinan)

B.Eng. in Software Engineering

Sep 2015 – Jun 2019

PUBLICATIONS

ACCEPTED PAPERS

(* denotes equal contribution and † denotes corresponding author.)

- [1] **Duzhen Zhang**, Feilong Chen, and Xiuyi Chen, “DualGATs: Dual Graph Attention Networks for Emotion Recognition in Conversations”, in Proceedings of the 61st Annual Meeting of the Association for Computational Linguistics (**ACL’2023, CCF-A, Main Conference, Long Paper**).
- [2] **Duzhen Zhang**, Yahan Yu, Chenxing Li, Jiahua Dong, Dan Su, Chenhui Chu, and Dong Yu “MM-LLMs: Recent Advances in MultiModal Large Language Models”, in Proceedings of the 62nd Annual Meeting of the Association for Computational Linguistics (**ACL’2024, CCF-A, Long Paper**).
- [3] **Duzhen Zhang**, Yahan Yu, Feilong Chen, and Xiuyi Chen, “Decomposing Logits Distillation for Incremental Named Entity Recognition”, in Proceedings of the 46th International ACM SIGIR Conference on Research and Development in Information Retrieval (**SIGIR’2023, CCF-A**).
- [4] **Duzhen Zhang**, Tielin Zhang, Shuncheng Jia, and Bo Xu, “Multi-scale Dynamic Coding improved Spiking Actor Network for Reinforcement Learning”, in Proceedings of the 36th Association for the Advancement of Artificial Intelligence (**AAAI’2022, CCF-A, Oral**).
- [5] **Duzhen Zhang**, Shuncheng Jia, and Qingyu Wang, “Recent Advances and New Frontiers in Spiking Neural Networks”, in Proceedings of the 31st International Joint Conference on Artificial Intelligence (**IJCAI’2022, CCF-A**).
- [6] Yahan Yu*, **Duzhen Zhang***†, Xiuyi Chen, and Chenhui Chu, “Flexible Weight Tuning and Weight Fusion Strategies for Continual Named Entity Recognition”, in Proceedings of the 62nd Annual Meeting of the Association for Computational Linguistics (**ACL’2024, CCF-A**).
- [7] Jiahua Dong*, **Duzhen Zhang***, Yang Cong, Wei Cong, Henghui Ding, and Dengxin Dai, “Federated Incremental Semantic Segmentation”, the IEEE/CVF Conference on Computer Vision and Pattern Recognition 2023 (**CVPR’2023, CCF-A**).
- [8] **Duzhen Zhang**, Wei Cong, Jiahua Dong, Yahan Yu, Xiuyi Chen, Yonggang Zhang, and Zhen Fang, “Continual Named Entity Recognition without Catastrophic Forgetting”, in Proceedings of the 2023 Conference on Empirical Methods in Natural Language Processing (**EMNLP’2023, CCF-B, Main Conference, Long Paper**).
- [9] **Duzhen Zhang**, Hongliu Li, Wei Cong, Rongtao Xu, Jiahua Dong, and Xiuyi Chen, “Task Relation Distillation and Prototypical Pseudo Label for Continual Named Entity Recognition”, in Proceedings of the 32nd ACM International Conference on Information and Knowledge Management (**CIKM’2023, CCF-B, Long Paper, Oral**).
- [10] **Duzhen Zhang**, Feilong Chen, Jianlong Chang, Xiuyi Chen, and Qi Tian, “Structure Aware Multi-Graph Network for Multi-Modal Emotion Recognition in Conversations”, IEEE Transactions on MultiMedia (TMM, CCF-B, SCI, IF:7.3).

- [11] **Duzhen Zhang**, Xiuyi Chen, Shuang Xu, and Bo Xu, “Knowledge Aware Emotion Recognition in Textual Conversations via Multi-Task Incremental Transformer”, in Proceedings of the 28th International Conference on Computational Linguistics (**COLING’2020, CCF-B, Long Paper, Oral**).
- [12] **Duzhen Zhang**, Zhen Yang, Fandong Meng, Xiuyi Chen, and Jie Zhou, “TSAM: A Two-Stream Attention Model for Causal Emotion Entailment”, in Proceedings of the 29th International Conference On Computational Linguistics (**COLING’2022, CCF-B, Long Paper, Oral**).
- [13] **Duzhen Zhang**, Tielin Zhang, Shuncheng Jia, Qingyu Wang, and Bo Xu, “Tuning Synaptic Connections instead of Weights by Genetic Algorithm in Spiking Policy Network”, Machine Intelligence Research (**MIR, ESCI**).
- [14] Feilong Chen*, **Duzhen Zhang***, Minglun Han, Xiuyi Chen, Jing Shi, Shuang Xu, and Bo Xu, “VLP: A Survey on Vision-Language Pre-training”, Machine Intelligence Research (**MIR, ESCI**).

UNDER REVIEW

- [15] **Duzhen Zhang**, Yahan Yu, Xiuyi Chen, Chenxing Li, and Dong Yu “Complementary Prompts: Continual Learning in Language Models”, Artificial Intelligence Journal (**AI, CCF-A, SCI, IF:14.4**).
- [16] **Duzhen Zhang**, Yahan Yu, Wei Cong, Chenxing Li, and Dong Yu “Type-Balanced Contextual Learning for Incremental Named Entity Recognition”, IEEE Transactions on Knowledge and Data Engineering (**TKDE, CCF-A, SCI, IF:8.9**).
- [17] **Duzhen Zhang**, Yahan Yu, Chenxing Li, Jiahua Dong, and Dong Yu “Federated Incremental Named Entity Recognition”, IEEE Transactions on Audio, Speech, and Language Processing (**TASLP, CCF-B, SCI, IF:5.4**).
- [18] **Duzhen Zhang**, Yahan Yu, Chenxing Li, Xiuyi Chen, and Dong Yu “Self-Expansion of LLMs with Mixture of LoRAs for Continual Learning”, Transactions of the Association for Computational Linguistics (**TACL, CCF-B, SCI, IF:10.9**).
- [19] Yahan Yu*, **Duzhen Zhang*†**, and Chenhui Chu, “Attacks on Continual Named Entity Recognition by Perturbing Incremental Samples”, in Proceedings of the 2024 Conference on Empirical Methods in Natural Language Processing (**will submit to EMNLP’2024, CCF-B, Long Paper**).
- [20] Yahan Yu*, **Duzhen Zhang*†**, and Chenhui Chu “Reasoning Augmented Instance Incremental Learning”, in Proceedings of the 13rd International Conference on Learning Representations (**will submit to ICLR’2025**).

OTHER PUBLICATIONS

ACCEPTED PAPERS

- [a] Xuanle Zhao, **Duzhen Zhang**, Liyuan Han, Tielin Zhang, and Bo Xu “ODE-based Recurrent Model-free Reinforcement Learning for POMDPs”, in Proceedings of the 37th Annual Conference on Neural Information Processing Systems (**NeurIPS’2023, CCF-A**).
- [b] Feilong Chen, **Duzhen Zhang**, Xiuyi Chen, Jing Shi, Shuang Xu, and Bo Xu “Unsupervised and Pseudo-Supervised Vision-Language Alignment in Visual Dialog”, in Proceedings of the 30th ACM International Conference on Multimedia (**ACM MM’2022, CCF-A**).
- [c] Manjie Xu, Chenxing Li, **Duzhen Zhang**, Dan Su, Wei Liang, and Dong Yu “Prompt-guided Precise Audio Editing with Diffusion Models”, in Proceedings of the 41st International Conference on Machine Learning (**ICML’2024, CCF-A**).
- [d] Qingyu Wang, Tielin Zhang, Minglun Han, Yi Wang, **Duzhen Zhang**, and Bo Xu “Complex Dynamic Neurons Improved Spiking Transformer Network for Efficient Automatic Speech Recognition”, in Proceedings of the 37th Association for the Advancement of Artificial Intelligence (**AAAI’2023, CCF-A**).

INTERN EXPERIENCE

Natural Language Processing Center, Technology Group (TEG), Tencent

Research Engineering Intern

May 2020 – Aug 2020

- Mentor: Dr. Suncong Zheng.
- Worked on Neural Chinese Word Segmentation incorporating Prior Vocabulary Knowledge.
- By incorporating prior knowledge of the dictionary into the neural Chinese word segmentation model, problems related to OOV and cross-domain word segmentation have been alleviated. This function has been launched into Tencent’s internal basic NLP tool “QQSeg”.

Pattern Recognition Center, Weixin Group (WXG), Tencent

Research Intern

Mar 2021 – Aug 2021

- Mentor: Dr. Zhen Yang and Dr. Fandong Meng.
- Worked on Emotion Anayasis in Conversations.
- The outcomes were accepted by COLING’22.

Search Strategy Department, Baidu

Research Intern

Apr 2023 – Jul 2023

- Mentor: Dr. Xiuyi Chen.
- Worked on Incremental Learning and LLM Inference Acceleration.
- The outcomes were accepted by CIKM’23.

AI Lab, Tencent

Research Intern

Jan 2024 – Now.

- Mentor: Dr. Chenxing Li and Dr. Dong Yu.
- Worked on Incremental Learning and Multimodal LLM.
- The outcomes were submitted to ACL’24, IEEE TASLP, and IEEE TKDE.

AWARDS & SCHOLARSHIPS

- First Prize Scholarship for Outstanding Students of Shandong University
- Second Prize in the National College English Contest
- Second Prize of National College Student Mathematics Competition
- Second Prize Scholarship of Institute of Automation, Chinese Academy of Sciences

Sep 2017

Apr 2018

Oct 2017

Dec 2022

IT SKILLS

- Programming language: Python > C++ == C == Shell > Java
- Deep learning framework: Pytorch > Tensorflow

[CV compiled on 2024-05-18]