

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][15][16][17]);
 - (3-2) Continual Learning in Large Language Models (Paper [18]);
 - (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*, Jiahua Dong†, Chenxing Li, 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, Findings, 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, Short Paper**).
- [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, Findings, Short Paper**).
- [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:8.4**).

- [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***, Wei Cong*†, Rundong He, Qi Liu, Chenxing Li, and Dong Yu “*Exploring Stability-Plasticity Trade-offs for Continual Named Entity Recognition*”, Artificial Intelligence Journal (**AI, CCF-A, SCI, IF:14.4**).
- [16] **Duzhen Zhang**, Wei Cong, Xiuyi Chen, 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**, 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**, Wei Cong, Qingyu Wang, Rongtao Xu, Xiuyi Chen, and Tielin Zhang “*Complementary Prompts for Continual Text Classification*”, in Proceedings of the 39th Association for the Advancement of Artificial Intelligence (**AAAI’2025, CCF-A**).

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 – Jul 2024.

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

**AWARDS &
SCHOLARSHIPS**

- First Prize Scholarship for Outstanding Students of Shandong University Sep 2017
- Second Prize in the National College English Contest Apr 2018
- Second Prize of National College Student Mathematics Competition Oct 2017
- Second Prize Scholarship of Institute of Automation, Chinese Academy of Sciences Dec 2022

IT SKILLS

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

[CV compiled on 2024-07-22]