CV

General Information

Full Name Haoyuan Peng - 彭浩源

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Education

2015 - 2018

Master's degree, Computer Science

Software School of Fudan University

- Under the supervision of Professor Zheng Xiaoqing, my main research areas included Parsing and Word Embeddings, with results published at AAAI-17 and AAAI-18.
- Recognized as an Outstanding Graduate of Shanghai in 2018.

2011 - 2015

Bachelor's degree, Computer Software Engineering

Software School of Fudan University

- Under the supervision of Professor Zheng Xiaoqing, my main research area was Parsing, with results published at IJCAI-15.
- Completed the Fudan University Undergraduate Research Project (Denghui Program) under the supervision of Professor Zheng Xiaoqing.

Experience

2024.04 - PRESENT

Senior Algorithm Engineer

ByteDance

- Utilizing SFT, DPO and RAG of LLMs, I have built AI avatars for creators on Douyin that possess similar personas, knowledge scopes and speaking styles.
- Designed and developed a long-term memory framework that provides chatbots with memory capabilities beyond the conversational context window, including memory summarization, updating, retrieval, and evaluation.

2023.01 - 2024.04

Senior Algorithm Engineer

Learnable.AI, Shanghai, China

- Conduct research on enhancing the reasoning error detection capabilities of LLMs through Chain-of-Thought (CoT) technology, and co-first authored the research findings published at IJCAI-24.
- Train large-scale models ranging from 7B to 70B parameters for real-world systems in the education domain. Applications include directly grading students' mathematical free-response answers and translating student responses into internally defined languages.
- Investigate OCR result correction algorithms for scenarios involving student responses, effectively addressing the challenge of distinguishing between student writing errors and OCR recognition errors.
- Evaluated as Excellent in the performance evaluation of probation period.

2018.07 - 2022.12

Senior Researcher

Tencent, Shanghai, China

- Led the development of multiple video information extraction algorithms within the **Yunzhi Media AI Platform**, including key information extraction from video frames, video tagging, and error correction for ASR/OCR. The video tagging algorithm achieved the second place in the AIWIN 2021 Algorithm Technology Competition without using the competition's training data.
- Responsible for the development of NLP algorithms as part of the **Public Opinion Analysis System**, tailored for securities industry regulators.

- Implemented traditional ML algorithms and deep learning-based NLP algorithms on the **Tencent TI-ONE ML Platform**, enabling users to train models on their custom data.
- I have been rated as Five-Star Performance once and Four-Star Performance twice in performance assessment.

2014 - 2015 **Data Analyst Intern**

eBay, Shanghai, China

Skills

Proficient in conducting cutting-edge research in natural language processing, with a track record of publishing papers in top conferences.

Experienced in all aspects of the full life cycle of AI/ML projects, including training, inference, engineering, and integration.

Highly skilled in Python programming, capable of writing high-quality python codes.

Familiar with Docker, capable of effectively deploying applications, managing versions, and migrating to enhance development efficiency.

Service

Conference Reviewer: KDD-23, EMNLP-23, SDM-24, COLING-24, ACL-24, MM-24

External Reviewer: ACL-23, ECAI-23

Honors and Awards

2021
- Second Place of AIWIN 2021 Algorithm Technology Competition

2020
- Tencent New Code Culture Award - Award for outstanding internal open source code projects

2018
- Outstanding Graduate in Shanghai

Publications

2024 **LLMs Can Find Mathematical Reasoning Mistakes by Pedagogical Chain-of-Thought**

Zhuoxuan Jiang, Haoyuan Peng (Equal Contribution), Shanshan Feng, Fan Li, Dongsheng Li. *Proceedings of the Thirty-Third International Joint Conference on Artificial Intelligence.*

2023 **VKIE: The Application of Key Information Extraction on Video Text**

An, Siyu and Liu, Ye and **Peng, Haoyuan** and Yin, Di. *Proceedings of the 2023 Conference on Empirical Methods in Natural Language Processing: Industry Track.*

2023 **OSAN: A One-Stage Alignment Network To Unify Multimodal Alignment and Unsupervised Domain Adaptation**

Liu, Ye and Qiao, Lingfeng and Lu, Changchong and Yin, Di and Lin, Chen and **Peng, Haoyuan** and Ren, Bo. *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR).*

2022 **Grafting Pre-trained Models for Multimodal Headline Generation**

Qiao, Lingfeng and Wu, Chen and Liu, Ye and **Peng, Haoyuan** and Yin, Di and Ren, Bo. *Proceedings of the 2022 Conference on Empirical Methods in Natural Language Processing: Industry Track.*

2019 **Detecting Abnormal Start-Ups, Unusual Resource Consumptions of the Smart Phone: A Deep Learning Approach**

ZHENG, Xiaoqing and LU, Yaping and **PENG, Haoyuan** and FENG, Jiangtao and ZHOU, Yi and JIANG, Min and MA, Li and ZHANG, Ji and JI, Jie. *ZTE Communications.*

2018

Attention-based belief or disbelief feature extraction for dependency parsing

Peng, Haoyuan and Liu, Lu and Zhou, Yi and Zhou, Junying and Zheng, Xiaoqing. *Proceedings of the AAAI Conference on Artificial Intelligence.*

2018

RNN-based sequence-preserved attention for dependency parsing

Zhou, Yi and Zhou, Junying and Liu, Lu and Feng, Jiangtao and **Peng, Haoyuan** and Zheng, Xiaoqing. *Proceedings of the AAAI Conference on Artificial Intelligence.*

2017

Learning context-specific word/character embeddings

Zheng, Xiaoqing and Feng, Jiangtao and Chen, Yi and **Peng, Haoyuan** and Zhang, Wenqing. *Proceedings of the AAAI Conference on Artificial Intelligence.*

2015

Character-based parsing with convolutional neural network

Zheng, Xiaoqing and **Peng, Haoyuan** and Chen, Yi and Zhang, Pengjing and Zhang, Wenqiang. *Twenty-Fourth International Joint Conference on Artificial Intelligence.*