LONGXU DOU

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EXPERIENCE

Research Scientist, Sea AI Lab   2023.7-Present

· Working on multilingual terminal agent training and LLM continue pretraining.

Research Intern, Microsoft Research Asia   2021.3-2022.9

· Working on text-to-SQL, improving the interaction between human and relational database.

Research Intern, Microsoft Research Asia   2017.7-2018.6

· Working on table-to-text, automatic table description generation.

EDUCATION

Harbin Institute of Technology   2018.9-2023.9
Ph.D of Computer Science

Harbin Institute of Technology   2014.9-2018.6
Bachelor of Computer Science

RESEARCH INTERESTS

Autonomous Agent: human-in-the-loop learning, agentic mid-training, agentic RL training.
Large Language Model: continual pretraining, data mixture, multilingual expansion.

RESEARCH PROJECTS

Reptile: Terminal-Agent with Human-in-the-loop Learning   2025.3-Now
Project Website: https://terminal-agent.github.io/blog/workflow/
We propose Reptile, a terminal agent that operates under an extended REPL (Read-Execute-Print-Learn) protocol with human-in-the-loop learning, where human feedback is seamlessly integrated into the agent's execution loop. By 200 human-annotations, the baseline 22B model improved 10% on Terminal-bench and SWEBench-Verified within an hour SFT training. It has been boosted further by RL training on generalizing meta-actions to more environments (still ongoing).

As the **project lead**, I made comprehensive plans, identified critical paths, coordinated the resource, conducted the engineering on agent workflow and research on agent model training.

Sailor2: Sailing in South-East Asiawith Inclusive Multilingual LLMs   2024.6-2024.12
Project Website: https://sea-sailor.github.io/blog/sailor2/
We present Sailor2 a community-driven project delivering state-of-the-art multilingual language models at three scales: 1B, 8B, and 20B parameters. Released under the Apache 2.0 license, Sailor2 focuses on South-East Asian (SEA) languages, enhancing accessibility to advanced language models across the region. Built upon the foundation of Qwen2.5, Sailor2 is pre-trained on 500B high-quality tokens, supporting 15 SEA languages. Notably, the Sailor2-20B-chat model achieves a 50-50 win rate against GPT-4o on most SEA languages, as judged by GPT-4o. 300K downloads since released.

As the **lead researcher**, I made comprehensive plans, identified critical paths, conducted the research on data engineering, model expansion and evaluation.

Sailor: Open Language Models for South-East Asia 2023.9-2024.4

Project Website: `https://sea-sailor.github.io/blog/sailor1/`

We present Sailor, a family of open language models ranging from 0.5B to 14B parameters, tailored for South East Asian (SEA) languages. From Qwen1.5, Sailor models accept 200B to 400B tokens, primarily covering the languages of English, Chinese, Vietnamese, Thai, Indonesian, Malay, and Lao. The training leverages several techniques, including BPE dropout for improving the model robustness, aggressive data cleaning and deduplication, and small proxy models to optimize data mixture. 200K downloads since released.

As the **lead researcher**, I made comprehensive plans, identified critical paths, conducted the research on data curation, model pre-training and evaluation.

SELECTED PUBLICATIONS

* indicates equal contribution. # indicates mentorship.

[**Report**] **Longxu Dou***, Qian Liu*, Fan Zhou*, Changyu Chen*, Sailor2 Team. Sailor2: Sailing in South-East Asia with Inclusive Multilingual LLMs.

[**NeurIPS-2025**] Xiangyan Liu, Jinjie Ni, Zijian Wu, Chao Du, **Longxu Dou**, Haonan Wang, Tianyu Pang, Michael Qizhe Shieh. Noisyrollout: Reinforcing visual reasoning with data augmentation.

[**COLM-2025**] Keyu Duan , Zichen Liu , Xin Mao , Tianyu Pang , Changyu Chen , Qiguang Chen , Michael Qizhe Shieh , **Longxu Dou#**. Efficient Process Reward Model Training via Active Learning.

[**ICML-2025**] Keyu Duan, Yiran Zhao, Zhili Feng, Jinjie Ni, Tianyu Pang, Qian Liu, Tianle Cai, **Longxu Dou**, Kenji Kawaguchi, Anirudh Goyal, J Zico Kolter, Michael Qizhe Shieh Unnatural Languages Are Not Bugs but Features for LLMs

[**ACL-2025**] Xiachong Feng, **Longxu Dou#**, Linpeng Kong. Reasoning does not necessarily improve role-playing ability.

[**ICLR-2025**] Qian Liu, Xiaosen Zheng, Niklas Muennighoff, Guangtao Zeng, **Longxu Dou**, Tianyu Pang, Jing Jiang, Min Lin. RegMix: Data Mixture as Regression for Language Model Pre-training.

[**TMLR2025**] Xiachong Feng, **Longxu Dou**, Ella Li, Qinghao Wang, Haochuan Wang, Yu Guo, Chang Ma, Lingpeng Kong. A Survey on Large Language Model-Based Social Agents in Game-Theoretic Scenarios

[**EMNLP-2025**] Dingzirui Wang, **Longxu Dou#**, Xuanliang Zhang, Qingfu Zhu, Wanxiang Che. DAC: Decomposed Automation Correction for Text-to-SQL.

[**COLING-2025**] Xuanliang Zhang, Dingzirui Wang, **Longxu Dou**, Qingfu Zhu, Wanxiang Che. MURRE: Multi-Hop Table Retrieval with Removal for Open-Domain Text-to-SQL.

[**COLING-2025**] Bohan Li, Jiannan Guan, **Longxu Dou#**, Qingfu Zhu, Wanxiang Che. Can Large Lanquage Models Understand You Better? An MBTl Personality Detection Dataset Aligned with Population Traits.

[**FCS2025**] Xuanliang Zhang, Dingzirui Wang, **Longxu Dou#**, Qingfu Zhu, Wanxiang Che. A survey of table reasoning with large language models.

[**NeurIPS-2024**] Chaofan Tao, Qian Liu#, **Longxu Dou#**, Niklas Muennighoff, Zhongwei Wan, Ping Luo, Min Lin, Ngai Wong. Scaling Laws with Vocabulary: Larger Models Deserve Larger Vocabularies.

[**EMNLP-2024**] **Longxu Dou***, Qian Liu*, Guangtao Zeng, Jia Guo, Jiahui Zhou, Xin Mao, Ziqi Jin, Wei Lu, Min Lin. Sailor: Open Language Models for South-East Asia.

[**EMNLP-2024**] Dingzirui Wang, **Longxu Dou#**, Xuanliang Zhang, Qingfu Zhu, Wanxiang Che. Improving Demonstration Diversity by Human-Free Fusing for Text-to-SQL.

[**ACL-2024**] Dingzirui Wang, **Longxu Dou#**, Xuanliang Zhang, Qingfu Zhu, Wanxiang Che. Numerical Enhancing Numerical Reasoning with the Guidance of Reliable Reasoning Processes.

[**AAAI-2024**] Dingzirui Wang, **Longxu Dou#**, Wanxiang Che. Exploring Equation as a Better Intermediate Meaning Representation for Numerical Reasoning of Large Language Models.

[**JMLC-2024**] Dingzirui Wang, **Longxu Dou#**, Wanxiang Che. ConDA: State-Based Data Augmentation for Context-Dependent Text-to-SQL.

[**JMLC-2023**] **Longxu Dou**, Yan Gao, Mingyang Pan, Dingzirui Wang, Wanxiang Che, Dechen Zhan, Jian-Guang Lou. UniSAr: A Unified Structure-Aware Autoregressive Language Model for Text-to-SQL Semantic Parsing.

[**AAAI-2023**] **Longxu Dou**, Yan Gao, Mingyang Pan, Dingzirui Wang, Wanxiang Che, Dechen Zhan, Jian-Guang Lou. MultiSpider: Towards Benchmarking Multilingual Text-to-SQL Semantic Parsing.

[**EMNLP-2022**] **Longxu Dou**, Yan Gao, Xuqi Liu, Mingyang Pan, Dingzirui Wang, Wanxiang Che, Dechen Zhan, Min-Yen Kan, Jian-Guang Lou. Towards Knowledge-Intensive Text-to-SQL Semantic Parsing with Formulaic Knowledge.

[**CoNLL-2019**] Wanxiang Che, **Longxu Dou**, Yang Xu, Yuxuan Wang, Yijia Liu, and Ting Liu. A Unified Pipeline for Meaning Representation Parsing via Effective Encoding and Efficient Training.

[**EMNLP-2018**] **Longxu Dou**, Guanghui Qin, Jinpeng Wang, Jin-Ge Yao, and Chin-Yew Lin. Data2Text Studio: Automated Text Generation from Structured Data.

SELECTED HONORS AND AWARDS

Tencent Scholarship	2022
National Scholarship	2018
Stars of Tomorrow Internship Award of Microsoft Research Asia	2018, 2022