

Shudong Liu

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Research Interests

Shudong Liu (刘树东) is currently a PhD candidate of NLP²CT Lab at University of Macau. His research interests broadly span Natural Language Processing and Machine Learning, with previous work on Machine Translation [8,9] and Dialogue System [10]. Recently, his research primarily focuses on:

Evaluation and Scalable Training Methods for large language models (LLMs)

- Developing reliable and robust **evaluation and reward** systems for LLMs [1,2,3,4,5]
- Exploring data-driven **scalable post-training** pipelines (SFT & RL) [1,2,3,4,6,7]
- Understanding and improving **reasoning** ability and **cognition** [4,5,6]

Currently, he is engaged in developing **general** and **generative reward models** for RL training [1,2,3,6].

Education

2022 – Present **Ph.D.** of Computer Science, **University of Macau**, Macau SAR

- Department of Computer and Information Science; Adviser: Prof. [Derek F. Wong](#)

2018 – 2022 **B.E.** of Software Engineering, **South China Agricultural University**, Guangzhou, China

- Department of Computer Science and Engineering; GPA: 91.8/100 (Top 3%)

Experience

2025.11 – Present, **Research Intern** at **Moonshot AI**

- Team: [Kimi RL Team](#); Topics: Multi-model Reward Systems for Code RL

2025.01 – 2025.11, **Research Intern** at **Shanghai AI Lab**

- Team: LLM Center and [OpenCompass](#). Advised by Dr. [Songyang Zhang](#) and Dr. [Kai Chen](#).
- Topics: Reward Models; Evaluation; Post-training (SFT & RL) [1,2,3,9,11]
- Project: [OpenCompass](#) ([GitHub Star: 6.5k+](#)); [Intern-S1](#) ([Hugging Face Downloads: 100k+](#));

2024.05 – 2024.12, **Research Intern** at **Microsoft Research Asia**

- Advised by Prof. [Jindong Wang](#) and Prof. [Xing Xie](#).
- Topics: Evaluation; Reasoning; Synthetic Data [4,5,21]

2022.08 – Present, **Research Assistant** at **NLP²CT Lab**, **University of Macau**

- Advised by Prof. [Derek F. Wong](#) and collaborated with Prof. [Xuebo Liu](#).
- Topics: Retrieval-augmented; Machine Translation; LLMs [7,8,9]

Selected Publications (* denotes equal contribution)

- [1] [CompassVerifier: A Unified and Robust Answer Verifier for LLMs Evaluation and Outcome Reward](#).
[Shudong Liu*](#), Hongwei Liu*, Junnan Liu, Songyang Gao, Chengqi Lyu, Yuzhe Gu, Wenwei Zhang, Derek F. Wong, Songyang Zhang, Kai Chen.
In: **EMNLP 2025** ([Top 1% score in ARR May 2025](#); [HF Downloads: 10k+](#); Adopted in [Intern-S1](#)).
- [2] [DeepResearch RewardBench: Evaluating Reward Models for Deep Research Report](#).
[Shudong Liu](#), Yuting Zhong, Guanhua Chen, Xinyi Yang, Lidia S. Chao, Jiaheng Liu, Derek F. Wong.
In: Submission of **ACL 2026**.
- [3] [CompassJuderger-2: Towards Generalist Judge Model via Verifiable Rewards](#).
Taolin Zhang*, Maosong Cao*, [Shudong Liu*](#), Alexander Lam, Songyang Zhang, Kai Chen.
In: Submission of **ICLR 2026**.
- [4] [UnifiedVerifier: Unifying Paradigms in Automated LLM Evaluation](#).

- Hongwei Liu, **Shudong Liu***, Junnan Liu, Taolin Zhang, Maosongcao, Chengqi Lyu, Yuzhe Gu, Wenwei Zhang, Derek F. Wong, Songyang Zhang, Kai Chen.
In: Submission of **ICLR 2026**.
- [5] [CultureVLM: Characterizing and Improving Cultural Understanding of Vision-Language Models](#).
Shudong Liu, Yiqiao Jin, Cheng Li, Derek F. Wong, Qingsong Wen, Lichao Sun, Haipeng Chen, Xing Xie, Jindong Wang.
In: **CVPR 2025 VLMs4All Workshop** (Submission of **ACL 2026**).
- [6] [Is Your Model Really A Good Math Reasoner? Evaluating Mathematical Reasoning with Checklist](#).
Zihao Zhou*, **Shudong Liu***, Maizhen Ning, Wei Liu, Jindong Wang, Derek F. Wong, Xiaowei Huang, Qiufeng Wang, Kaizhu Huang.
In: **ICLR 2025**.
- [7] [Intern-S1: A Scientific Multimodal Foundation Model](#).
Shudong Liu as a contributor in Intern-S1 Team, Shanghai AI Lab.
In: **Technical Report** ([HuggingFace Downloads: 100k+](#); [GitHub Star: 600+](#)).
- [8] [Can LLMs Learn Uncertainty on Their Own? Expressing Uncertainty Effectively in A Self-Training Manner](#).
Shudong Liu, Zhaocong Li, Xuebo Liu, Runzhe Zhan, Derek F. Wong, Lidia S. Chao, Min Zhang.
In: **EMNLP 2024**.
- [9] [Domain-Aware k-Nearest-Neighbor Knowledge Distillation for Machine Translation](#).
Zhexuan Wang*, **Shudong Liu***, Xuebo Liu, Miao Zhang, Derek F. Wong and Min Zhang.
In: **ACL 2024 Findings**.
- [10] [kNN-TL: k-Nearest-Neighbor Transfer Learning for Low-Resource Neural Machine Translation](#).
Shudong Liu, Xuebo Liu, Derek F. Wong, Zhaocong Li, Wenxiang Jiao, Lidia S. Chao, Min Zhang.
In: **ACL 2023**.
- [11] [Cross-domain Slot Filling with Distinct Slot Entity and Type Prediction](#).
Shudong Liu, Peijie Huang, Zhanbiao Zhu, Hualin Zhang and Jianying Tan.
In: **NLPCC 2021 (Oral)**.
- [12] [ATLAS: A High-Difficulty, Multidisciplinary Benchmark for Frontier Scientific Reasoning](#).
Hongwei Liu*, Junnan Liu*, **Shudong Liu***, Haodong Duan, Yuqiang Li, Mao Su, Xiaohong Liu, Guangtao Zhai, Xinyu Fang, Qianhong Ma et al. (core contributor in ATLAS Team, Shanghai AI Lab)
In: **Technical Report**.

Other Works

- [13] [OpenCompass: A universal evaluation platform for foundation models](#).
OpenCompass Contributors.
In: <https://github.com/open-compass/opencompass>.
- [14] [Neuron-Guided Fine-Tuning: Unlocking Efficient Alignment Mechanisms for Large Language Models](#).
Zeyu Wu, Junchao Wu, **Shudong Liu**, Runzhe Zhan, Xin Chen, Shu Yang, Yichao Du, Longyue Wang, Weihua Luo, Jinsong Su, Derek F. Wong.
In Submission of **ACL 2026**.
- [15] [From Scenes to Elements: Multi-Granularity Evidence Retrieval for Verifiable Multimodal RAG](#).
Guanhua Chen, Chuyue Huang, Yutong Yao, **Shudong Liu**, Xueqing Song, Lidia S. Chao, Derek F. Wong.
In Submission of **ACL 2026**.

- [16] [Chain-of-Procedure: Hierarchical Visual-Language Reasoning for Procedural QA](#).
Guanhua Chen, Yutong Yao, Shenghe Sun, Ci-Jun Gao, **Shudong Liu**, Lidia S. Chao, Feng Wan, Derek F. Wong.
In Submission of **ACL 2026**.
- [17] [Perceiving More, Reasoning Less? Benchmarking Fine-grained Cross-Image Transformation in VLMs](#).
Yutong Yao, Guanhua Chen, Yiran Chen, Yuanze Xiao, Junchao Wu, **Shudong Liu**, Lidia S. Chao, Derek F. Wong.
In Submission of **ACL 2026**.
- [18] [How Brittle is Agent Safety? Rethinking Agent Risk under Intent Concealment and Task Complexity](#).
Zihan Ma, Dongsheng Zhu, **Shudong Liu**, Taolin Zhang, Junnan Liu, Qingqiu Li, Minnan Luo, Songyang Zhang, Kai Chen.
In: Submission of **ICLR 2026**.
- [19] [Deciphering Trajectory-Aided LLM Reasoning: An Optimization Perspective](#).
Junnan Liu, Hongwei Liu, Linchen Xiao, **Shudong Liu**, Taolin Zhang, Zihan Ma, Songyang Zhang, Kai Chen.
In: **Preprint**. (Submission of **ICLR 2026**).
- [20] [How Far Are We from Genuinely Useful Deep Research Agents?](#)
Dingling Zhang, He Zhu, JinCheng Ren, Kangqi Song, Xinran Zhou, **Shudong Liu**, Jiabin Luo, Weihao Xie, Zhaohui Wang, Tianrui Qin, King Zhu, Yuqing Wang, Qianben Chen, Yuchen Eleanor Jiang, Jiaheng Liu, Wangchunshu Zhou.
In: Submission of **ACL ARR**.
- [21] [Data Source Matters: On Data Reliance of Backdoor Mitigation in Large Language Models](#).
Zhaocong Li, **Shudong Liu**, Shu Yang, Jianhui Pang, Xuebo Liu, Di Wang, Lidia S. Chao, Min Zhang, Derek F. Wong.
In Submission of **ACL ARR**.
- [22] [Harnessing the Reasoning Economy: A Survey of Efficient Reasoning for Large Language Models](#).
Rui Wang, Hongru Wang, Boyang Xue, Jianhui Pang, **Shudong Liu**, Yi Chen, Jiahao Qiu, Derek Fai Wong, Heng Ji, Kam-Fai Wong.
In: **Preprint**. (**Significant Contributions**)
- [23] [Learning from “Silly” Questions Improves Large Language Models, But Only Slightly](#).
Tingyuan Zhu, **Shudong Liu**, Yidong Wang, Derek F. Wong, Han Yu, Takahiro Shinozaki, Jindong Wang.
In: Good-Data **Workshop of AAAI 2025**.
- [24] [Can LMs Generalize to Future Data? An Empirical Analysis on Text Summarization](#).
Chi Seng Cheang, Hou Pong Chan, Derek F. Wong, Xuebo Liu, Zhaocong Li, Yanming Sun, **Shudong Liu** and Lidia S Chao.
In: **EMNLP 2023**.
- [25] [A Graph Attention Interactive Refine Framework with Contextual Regularization for Jointing Intent Detection and Slot Filling](#).
Zhanbiao Zhu, Peijie Huang, Haojing Huang, **Shudong Liu** and Leyi Lao.
In: **ICASSP 2022**.
- [26] [Slot Filling Model with Boundary Prediction and Dynamic Template](#).
Zhanbiao Zhu, Peijie Huang, Yexing Zhang, **Shudong Liu**, Hualin Zhang and Junyao Huang.
In: **CCL 2021**. (Journal of Chinese Information Processing 2023, 37(4): 72-80.)
- [27] [A Dependency-Guided Character-Based Slot Filling Model for Chinese Spoken Language](#)

Understanding.

Zhanbiao Zhu, Peijie Huang, Yexing Zhang, **Shudong Liu**, Hualin Zhang and Junyao Huang.
In: **CCL 2021**. (Journal of Chinese Information Processing 2022, 36 (8): 118-126.)

Books

[28] **Future Learning with Large Language Models: Applications and Research in Education**

Chapter 3: Improving Large Foundation Models in Education for Multicultural Understanding
Jindong Wang, **Shudong Liu**. (ISBN: 9781032934327)

Professional Service

OpenReview Chair: NLPCC 2024

PC Member / Reviewer: ICML; ICLR; NeurIPS; ARR; ACL; EMNLP; NAACL; AAAI; AISTATS; CCL

Journal Reviewer: TASLP; Neurocomputing; Information Processing and Management

Student Volunteer: EMNLP 2024/2025; MT Summit 2023

Teaching and Talks

Teaching Assistant: CISC7021 Applied Natural Language Processing (2022-2025 Fall)

Teaching Assistant: CISC7203 Database and Data Mining Technologies (2024 Spring)

Invited Talk:

- Give talk Transfer Learning for Low-Resource NMT at University of Toronto (2024.02)
- Give talk LLMs-as-a-Judge for Evaluation and Reward Models at ICNLP 2026 (2026.03)

Major Awards and Honors

Stars of Tomorrow at Microsoft Research Asia (2025)

Outstanding Ph.D. Student at NLP2CT Lab (2025)

Outstanding Reviewer at EMNLP 2024 (2024)

Outstanding Undergraduate Graduate at SCAU (2022)

Outstanding Undergraduate Graduation Thesis at SCAU (2022)

Top-5th at the Shared Tasks of CCL 2021 (2021)



WeChat



X (Twitter)