

JINJIE NI

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Research Interests

I am particularly interested in: Unleashing the power of (multi-modal) language models, such as reasoning and long-range understanding; Improving the evaluation of (multi-modal) language models; Compute-optimal learning.

Areas: Foundation Models, Large Language Models, Large Multimodal Models

Experiences

Academia

- | | |
|---|-----------------------|
| National University of Singapore
Research Fellow
- Foundation Models. | 2023 - present |
| Nanyang Technological University
Ph.D. in Computer Science
- Efficient Language Models and Dialogue Agents. | 2020 - 2023 |
| Harvard University , Institute for Applied Computational Science
Research Assistant (remote)
- VAE-GAN variants. | Jan 2019 - March 2019 |
| Northwestern Polytechnical University
B.Eng. in Electrical Engineering
- Multimodal Models. | 2016 - 2020 |

Industry

- | | |
|---|------------------------|
| Research Intern at Alibaba Group, Singapore
DAMO Academy
- In charge of modality alignment for pre-trained models. Worked with Dr. Yukun Ma. | April 2022 - Oct 2022 |
| Research Intern at Continental
Continental-NTU Corp Lab
- In charge of fusing task-oriented and open-domain dialogue agents. Worked with Dr. Rui Mao. | Sept 2020 - March 2022 |
| Research Intern at Chinese Academy of Sciences
Institute of Automation
- In charge of anchor-free position estimation and object detection. Worked with Dr. Sen Xin. | Feb 2020 - June 2020 |
| Institute of Computing Technology
- Training abstractive summarization models. Worked with Dr. Shuai Jiao. | Oct 2018 - Nov 2018 |

Featured Research

For full publication list, see [Google Scholar](#).

- **MixEval**
 - MixEval: Deriving Wisdom of the Crowd from LLM Benchmark Mixtures. arXiv'24. [\[Twitter\]](#)
 - **Jinjie Ni**, Fuzhao Xue, Xiang Yue, Yuntian Deng, Mahir Shah, Kabir Jain, Graham Neubig, Yang You.
 - Building golden-standard LLM evaluation from off-the-shelf benchmark mixtures. The **best** LLM evaluation at the time of release for its **SOTA** model ranking accuracy (0.96 correlation with Chatbot Arena) and efficiency (6% the time and cost of running MMLU). Moreover, it's dynamic.
- **OpenMoE**

- OpenMoE: An Early Effort on Open Mixture-of-Experts Language Models. ICML'24. [[Twitter](#)]
- Fuzhao Xue, Zian Zheng, Yao Fu, **Jinjie Ni**, Zangwei Zheng, Wangchunshu Zhou, Yang You.
- The **first fully open** MoE-based Decoder-only LLM trained over chinchilla scaling law.
- **InstructWild**
 - Instruction in the Wild: A User-Based Instruction Dataset. Github.
 - **Jinjie Ni**, Fuzhao Xue, Yuntian Deng, Jason Phang, Kabir Jain, Mahir Hitesh Shah, Zangwei Zheng, Yang You.
 - The **first** large-scale instruction tuning dataset harvested from the web.
- **GHA**
 - Finding the Pillars of Strength for Multi-Head Attention. ACL'23.
 - **Jinjie Ni**, Rui Mao, Zonglin Yang, Han Lei, Erik Cambria.
 - Cutting off redundancy for Transformer layers. **SOTA** efficiency and performance among efficient transformers. Concurrent work of GQA, cited and discussed in the GQA paper.
- **PAD**
 - Adaptive Knowledge Distillation between Text and Speech Pre-trained Models. ICASSP'23.
 - **Jinjie Ni**, Yukun Ma, Wen Wang, Qian Chen, Dianwen Ng, Han Lei, Trung Hieu Nguyen, Chong Zhang, Bin Ma, Erik Cambria.
 - Knowledge distillation between text and speech pre-trained models. The **SOTA** text-speech distillation method at the time of release.
- **HiTKG**
 - HiTKG: Towards Goal-Oriented Conversations via Multi-Hierarchy Learning. AAAI'22.
 - **Jinjie Ni**, Vlad Pandelea, Tom Young, Haicang Zhou, Erik Cambria.
 - The **first** work that trains agents to actively guide the conversations. It ushers in **a new era** of intelligence for dialogue agents. The **SOTA** approach for turn-level dialogue reasoning tasks.
- **FusedChat**
 - FusedChat: Towards Fusing Task-Oriented Dialogues and Chitchat in Multi-turn Conversational Agents. AAAI'22.
 - Tom Young, Frank Xing, Vlad Pandelea, **Jinjie Ni**, Erik Cambria.
 - The **first** attempt of fusing task-oriented and open-domain dialogue systems.
- **Recent Advances in Deep Learning Based Dialogue Systems**
 - Recent Advances in Deep Learning Based Dialogue Systems. AIRE.
 - **Jinjie Ni**, Tom Young, Vlad Pandelea, Fuzhao Xue, Erik Cambria.
 - An 80-page systematic review for dialogue systems. One of the **most** cited dialogue system reviews.

Services

Conference PC Member / Reviewer

- Neurips 2024, ACL 2024, EMNLP 2024, ACL 2023, EMNLP 2023, AAAI 2023

Journal Reviewer

- Knowledge-Based Systems, Information Fusion, Artificial Intelligence Review, Cognitive Computation

Co-organizer

- MLNLP community