Sijie Cheng

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LONG-TERM VISION

As a second-year Ph.D. candidate, Sijie Cheng is passionate about pioneering **egocentric foundation models for Embodied AI**, aiming to create systems that see, think, and act like humans from a first-person perspective. Driven by her dedication to innovation, she aspires to advance the fields of **wearable devices** and **robotics**, pushing the boundaries of technology to create impactful products.

EDUCATION

- **Tsinghua University** *Sept. 2023 - Present*
  Ph.D. in Computer Science and Technology Beijing, China
  ○ Advisor: Prof. **Yang Liu**, Laboratory: **Natural Language Processing Lab @ Tsinghua University**.
  ○ Passed the Candidacy Exam ahead of schedule.
  ○ **Candidates of Youth Talents Support Project - Doctoral Students**, one of only two in the department.

- **Fudan University** *Sept. 2020 - Jun. 2023*
  M.Sc. in Software Engineering Shanghai, China
  ○ Advisor: Prof. **Yanghua Xiao**, Laboratory: **Knowledge Works Research Laboratory @ Fudan University**.
  ○ **Outstanding Master's Thesis Award of the Shanghai Computer Society**: *Analyzing and Exploiting Tacit Knowledge inside Pre-trained Language Models*.
  ○ **National Scholarship, Outstanding Graduate Student in Shanghai**.

- **Chongqing University of Posts and Telecommunications** *Sept. 2016 - Jun. 2020*
  B.Sc. in Software Engineering Chongqing, China
  ○ Advisor: Prof. **Yue Zhang**, Laboratory: **Natural Language Processing Lab @ Westlake University**.
  ○ Member of Excellent Engineer Class, GPA: 3.75/4.00 (**1**/75).
  ○ **Best Bachelor Thesis Award in School**.

PUBLICATIONS LLM=LARGE LANGUAGE MODELS, VLM=VISION LANGUAGE MODELS, O=OTHERS

[*: Equal Contribution, ¶: My Mentored Students]

[VLM] **VidEgoThink: Assessing Egocentric Video Understanding Capabilities for Embodied AI**.
Sijie Cheng, Kechen Fang*¶, Yangyang Yu*¶, Sicheng Zhou*¶, Bohao Li, Ye Tian, Tingguang Li, Lei Han, Yang Liu. *Pre-print 2024*. *Huggingface Daily Paper Top-1*.

[VLM] **EgoThink: Evaluating First-Person Perspective Thinking Capability of Vision-Language Models**.
Sijie Cheng*, Zhicheng Guo*¶, Jingwen Wu*¶, Kechen Fang¶, Peng Li, Huaping Liu, Yang Liu. In *CVPR 2024* *Highlights (2.8%)*.

[LLM] **OpenChat: Advancing Open-source Language Models with Mixed-quality Data**.
Sijie Cheng*, Guan Wang*¶, Xianyuan Zhan, Xiangang Li, Sen Song, Yang Liu. In *ICLR 2024*, *5k+ GitHub Stars and 100k+ Huggingface Downloads*.

[LLM] **StableToolBench: Towards Stable Large-Scale Benchmarking on Tool Learning of Large Language Models**.
Zhicheng Guo¶, **Sijie Cheng**, Hao Wang, Shihao Liang, Yujia Qin, Peng Li, Zhiyuan Liu, Maosong Sun, Yang Liu. In *ACL 2024*, *~100 GitHub Stars*.

[VLM] **Instruction-Guided Visual Masking**.
Jinliang Zheng, Jianxiong Li, **Sijie Cheng**, Yinan Zheng, Jiaming Li, Jihao Liu, Yu Liu, Jingjing Liu, Xianyuan Zhan. In *NeurIPs 2024* & *ICML 2024 MFM-EAI Workshop* *Outstanding Paper*.

[VLM] **DecisionNCE: Embodied Multimodal Representations via Implicit Preference Learning**.
Jianxiong Li, Jinliang Zheng, Yinan Zheng, Liyuan Mao, Xiao Hu, **Sijie Cheng**, Haoyi Niu, Jihao Liu, Yu Liu, Jingjing Liu, Ya-Qin Zhang, Xianyuan Zhan. In *ICML 2024* & *ICML 2024 MFM-EAI Workshop* *Outstanding Paper*.

[LLM] **DEEM: Dynamic Experienced Expert Modeling for Stance Detection**.
Xiaolong Wang*¶, Yile Wang*, **Sijie Cheng**, Peng Li, Yang Liu. In *LREC-COLING 2024* *Oral*.

[VLM] **ConvLLaVA: Hierarchical Backbones as Visual Encoder for Large Multimodal Models**.
Chunjiang Ge, **Sijie Cheng**, Ziming Wang, Jiale Yuan, Yuan Gao, Jun Song, Shiji Song, Gao Huang, Bo Zheng. *Pre-print 2024*. *Huggingface Daily Paper Top-1*.

[LLM] **Speak It Out: Solving Symbol-Related Problems with Symbol-to-Language Conversion for Language Models**.
Yile Wang, **Sijie Cheng**, Zixin Sun¶, Peng Li, Yang Liu.
In *ICLR-Workshop 2024*.

[LLM] **Unsupervised Explanation Generation via Correct Instantiations**.
Sijie Cheng, Zhiyong Wu, Jiangjie Chen, Zhixing Li, Yang Liu, Lingpeng Kong.
In *AAAI 2023 Oral*.

[LLM] **Modeling Adversarial Attack on Pre-trained Language Models as Sequential Decision Making**.
Sijie Cheng*, Xuanjie Fang*¶, Yang Liu, Wei Wang.
In *ACL 2023*.

[LLM] **Prompt-Guided Retrieval Augmentation for Non-Knowledge-Intensive Tasks**.
Zhicheng Guo¶, **Sijie Cheng**, Yile Wang, Peng Li, Yang Liu.
In *ACL 2023*.

[LLM] **Say What You Mean! Large Language Models Speak Too Positively about Negative Commonsense Knowledge**.
Jiangjie Chen, Wei Shi, Ziquan Fu, **Sijie Cheng**, Lei Li, Yanghua Xiao.
In *ACL 2023*.

[O] **Evolving Connectivity for Recurrent Spiking Neural Networks**.
Guan Wang¶, Yuhao Sun, **Sijie Cheng**, Sen Song.
In *NeurIPS 2023*.

[O] **Offline Reinforcement Learning with Long-Tailed Datasets**.
Li Jiang, **Sijie Cheng**, Jielin Qiu, Haoran Xu, Victor Wai Kin Chan, Ding Zhao.
In *ICML-Workshop 2023*.

[LLM] **Learning What You Need from What You Did: Product Taxonomy Expansion with User Behavior Supervision**.
Sijie Cheng, Zhouhong Gu, Bang Liu, Rui Xie, Wei Wu, Yanghua Xiao.
In *ICDE 2022, One Patent*.

[LLM] **Can Pre-trained Language Models Interpret Similes as Smart as Human?**
Sijie Cheng*, Qianyu He*¶, Zhixu Li, Rui Xie, Yanghua Xiao.
In *ACL 2022*.

[LLM] **Unsupervised Editing for Counterfactual Stories**.
Jiangjie Chen, Chun Gan, **Sijie Cheng**, Yanghua Xiao, Hao Zhou, Lei Li.
In *AAAI 2022 Oral*.

[O] **FedGEMS: Federated Learning of Larger Server Models via Selective Knowledge Fusion**.
Sijie Cheng, Jingwen Wu¶, Yanghua Xiao, Yang Liu, Yang Liu.
In *Google Workshop 2021, One Patent*.

[LLM] **On Commonsense Cues in BERT for Solving Commonsense Tasks**.
Leyang Cui, **Sijie Cheng**, Yu Wu, Yue Zhang.
In *ACL 2021*.

[O] **NEARM: Natural Language Enhanced Association Rules Mining**.
Shiya Ren, Zhixing Li, Huaming Wang, Yuan Li, Ke Shen, **Sijie Cheng**.
In *ICDM-Workshop 2018*.

INTERNSHIP EXPERIENCE

- **Robotics X ∘ Tencent [🌐]** *Jun. 2024 - Present*
  Research Intern Shenzhen, China
  ∘ Mentors: Lei Han, Tingguang Li, Ye Tian
  ∘ Developing egocentric benchmark and foundation models for Embodied AI.

- **Pre-training Group ∘ 01.AI Company [🌐]** *Aug. 2023 - Mar. 2024*
  Research Intern Beijing, China
  ∘ Mentors: Xiangang Li, Wenhao Huang, Xiang Yue
  ∘ Implemented OpenChat, enhancing the performance of open-source LLMs (7B) comparable to GPT-4.

- **Investment Department ∘ Sinovation Ventures [🌐]** *Feb. 2023 - Dec. 2023*
  Investment Intern Beijing, China
  ∘ Mentor: Bobing Ren
  ∘ Presented survey of Generative AI and analyzed the technique of the corresponding projects.

- **Natural Language Processing Group ∘ Shanghai AI Lab [🌐]** *Mar. 2022 - Dec. 2022*
  Research Intern Shanghai, China

- Mentors: Prof. Lingpeng Kong, Zhiyong Wu
- Elicited Pre-trained Language Models to generate free-text explanations.

- **Institute for AI Industry Research** ∘ **Tsinghua University [⊕]** *Jun. 2021 - Aug. 2023*
  Research Intern Beijing, China
  - Mentors: Prof. Yang Liu, Prof. Yang (Veronica) Liu
  - Transferred implicit knowledge among foundation models as continual knowledge bases.

- **Natural Language Understanding Group** ∘ **Meituan [⊕]** *Jun. 2021 - Aug. 2023*
  Research Intern Shanghai, China
  - Mentor: Rui Xie
  - Extracted user behavior data via BERT for taxonomy expansion.

- **Text Intelligence Lab** ∘ **Westlake University [⊕]** *Sep. 2019 - Sep. 2020*
  Research Intern Hangzhou, China
  - Mentors: Prof. Yue Zhang, Leyang Cui
  - Conducted analysis of commonsense knowledge in Pre-trained Language Models.

INVITED TALKS

- **EgoThink: Evaluating First-Person Perspective Thinking Capability of Vision-Language Models,** ZhiDX, Online, Sep. 2024
- **Core Competitiveness of Scientific Research in the Era of Large Models,** The Fourth Chinese Conference on Affective Computing, Nanchang, Jul. 2024
- **EgoThink: Evaluating First-Person Perspective Thinking Capability of Vision-Language Models,** AITIME, Online, Apr. 2024
- **Advancing Open-source Language Models with Mixed-Quality Data,** Next Capital, Online, Mar. 2024
- **Small- and Medium-Scale Foundation Models are Everywhere,** Chinese Academy of Sciences, Beijing, China, Mar. 2024
- **OpenChat: Advancing Open-source Language Models with Mixed-Quality Data,** Max-likelihood Community, Online, Nov. 2023
- **How to adapt to the pace of research in the era of LLMs,** MLNLP Community, Online, Nov. 2023
- **Research trends in the era of Foundation models,** Beijing Alumni Association of Fudan University, Beijing, China, Nov. 2023
- **Foundation, Construction, and Application of Knowledge Graph,** Tsinghua University, Beijing, China, Jul. 2021
- **Follow Your Heart: My Experience in Computer Science,** Microsoft Research Asia, Beijing, China, Mar. 2019

SELECTED HONORS & AWARDS

- **Financial Assistance,** Widening Natural Language Processing@EMNLP, 2024
- **Outstanding Master's Thesis Award,** Shanghai Computer Society, 2024
- **Financial Assistance,** The Twelfth International Conference on Learning Representations (ICLR), 2024
- **Outstanding Graduate Student,** Shanghai, 2023
- **National Scholarship,** China, 2021-2022
- **Academic Scholarship,** Fudan University, 2020-2022
- **1st Place,** Women's Basketball Graduate School Cup in Fudan University, 2020
- **Best Bachelor Thesis Award,** Chongqing University of Posts and Telecommunications, 2020
- **User Experience Award,** Google Girl Hackathon, 2018
- **Best Technology Award,** Google Innocamp, 2017
- **Academic Scholar,** Chongqing University of Posts and Telecommunications, 2016-2018
- **1st Prize,** National Olympiad in Informatics in Provinces, 2006-2016

LEADERSHIP & VOLUNTEER EXPERIENCE

- **Co-founder & Principal of Female Community** *Apr. 2018 - Jun.2020*
  Opening Source Community & Students Open Source Conference [⊕]
  - 1k+ community users and average daily site visits up to 600.
  - Over 400 students from all over the world attended, and more than 7,000 people watched it online.

- **Invited student representative** *Dec. 2017 & March. 2019*
  MSRA Ada Workshop [⊕]
  - Invited to share my experience with around 200 girls as one of two student delegates in 2019.
  - Due to my out-performance as a non-local participant, MSRA set up 10 Travel Grants to subsidize non-local girls.

- **Team Leader** *Jan. 2019*
  Google Flutter x College Team [⊕]
  - Help Google Flutter Team establish mirror images in China.
  - Our cooperative school association includes TUNA at Tsinghua University, OSA at Peking University, and so on.