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** & **Institute for AI Industry Research**.
  - **Youth Talents Support Project for Doctoral Students**, China Association for Science and Technology.
- **Fudan University** *Sept. 2020 - Jun. 2023*
  M.Sc. in Software Engineering Shanghai, China
  - Advisor: Prof. **Yanghua Xiao**, Laboratory: **Knowledge Works Research Laboratory**.
  - **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
  - Member of **Excellent Engineer Class**, GPA: 3.75/4.00 (**1**/75).
  - **Best Bachelor Thesis Award in School**.

Long-Term Mission I: Next-Generation AI Hardware Targeting AGI

- **Foundation Model Department** ◦ **RAYNEO (Smart Glasses) [🌐]** *Dec. 2024 - Present*
  Research Intern Shenzhen, China
  - Manager: Hongwei Li (CEO)
  - Responsible for Artificial Intelligence business and research in the smart glasses scenario.
- **Robotics X** ◦ **Tencent [🌐]** *Jun. 2024 - Dec. 2024*
  Research Intern Shenzhen, China
  - Mentors: Lei Han, Peers: 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, Peers: Wenhao Huang, Xiang Yue
  - 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
  - Presenting survey of Generative AI and analyzing the technique of the corresponding projects.
- **Selected Paper - Foundation Models for Embodied AI**
  [*: Equal Contribution, ¶: My Mentored Students]

  [1]. 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.***

  [2]. 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%).***

  [3]. 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.***

  [4]. 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.***

[5]. 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***.

[6]. 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***.

- **Selected Paper - Tool Learning**
[*: Equal Contribution, ¶: My Mentored Students]

[7]. StableToolBench-MirrorAPI: Modeling Tool Environments as Mirrors of 7,000+ Real-World APIs.
Zhicheng Guo¶, **Sijie Cheng**, Yuchen Niu, Hao Wang, Sicheng Zhou¶, Wenbing Huang, Yang Liu. ***Under Review***.

[8]. 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***.

Long-Term Mission II: Large Language Models as Implicit Knowledge Base

- **Natural Language Processing Group** ◦ **Shanghai AI Lab [🌐]** *Mar. 2022 - Dec. 2022*
Research Intern Shanghai, China
◦ Mentors: Prof. Lingpeng Kong, Peer: Zhiyong Wu
◦ Elicited Pre-trained Language Models to generate free-text explanations.

- **Natural Language Understanding Group** ◦ **Meituan [🌐]** *Nov. 2020 - Jun. 2021*
Research Intern Shanghai, China
◦ Mentor: Rui Xie
◦ Extracted user behavior data via BERT for taxonomy expansion.

- **Institute for AI Industry Research** ◦ **Tsinghua University** *Jun. 2021 - Aug. 2023*
Visting Student Beijing, China
◦ Advisor: Prof. Yang Liu and Yang (Veronica) Liu
◦ Large Foundation Models as Continual Knowledge Bases

- **Natural Language Processing Lab** ◦ **Westlake University** *Sept. 2019 - Sept. 2020*
Visting Student Hangzhou, China
◦ Advisor: Prof. Yue Zhang
◦ Conducted analysis of commonsense knowledge in Pre-trained Language Models.

- **Selected Paper - Applications**
[*: Equal Contribution, ¶: My Mentored Students]

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

[2]. Leveraging Language-based Representations for Better Solving Symbol-related Problems with Large Language Models.
Yile Wang, **Sijie Cheng**, Zixin Sun¶, Peng Li, Yang Liu.
In ***COLING 2025, ICLR-Workshop 2024***.

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

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

[5]. 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***.

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

[7]. 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***.

- **Selected Paper - Analysis**
  [*: Equal Contribution, ¶: My Mentored Students]

  [8]. 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***.

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

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

- **Selected Paper - Others**
  [*: Equal Contribution, ¶: My Mentored Students]

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

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

  [13]. 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***.

Selected Honors & Awards

- **Youth Talents Support Project, Ph.D. Program - China Computer Federation,** China Association for Science and Technology, 2025
- **Annual Best Paper Award,** Machine Translation Group@Tsinghua University, 2025
- **1st Place,** Tencent Basketball Association, 2024
- **President Award,** Institute for AI Industry Research@Tsinghua University, 2024
- **Financial Assistance,** Widening Natural Language Processing@EMNLP, 2024
- **Outstanding Paper,** Multi-modal Foundation Model meets Embodied AI@ICML, 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

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