Zirui Cheng

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Education

Tsinghua University **2024 (Expected)**
B.E. in Computer Science and Technology *Beijing, China*
B.A. in Economics and Finance
GPA: 3.87/4.00

Interests

Human-Computer Interaction, Machine Learning, Software Engineering.

Publications

Peer-reviewed papers

[1] **Modeling the Trade-off of Privacy Preservation and Activity Recognition on Low-Resolution Images**
Yuntao Wang*, **Zirui Cheng***, Xin Yi, Yan Kong, Xueyang Wang, Xuhai Xu, Yukang Yan, Chun Yu, Shwetak Patel, Yuanchun Shi. (* indicates co-first author)
CHI 2023 – *2023 ACM CHI Conference on Human Factors in Computing Systems.*

Preprints

[1] **TeacherLM: Teaching to Fish Rather Than Giving the Fish, Language Modeling Likewise**
Nan He*, Hanyu Lai*, Chenyang Zhao*, **Zirui Cheng**, Junting Pan, Ruoyu Qin, Ruofan Lu, Rui Lu, Yunchen Zhang, Gangming Zhao, Zhaohui Hou, Zhiyuan Huang, Shaoqing Lu, Ding Liang, Mingjie Zhan. (* indicates co-first author)
arXiv:2310.19019, 2023.

Experience

Carnegie Mellon University **2023**
Research Intern at Human-Computer Interaction Institute, Advisor: Kenneth HolsteinPittsburgh, PA, USA

- Conducted quantitative analysis of evaluation studies for a system enabling community-driven data curation for AI evaluation in online communities.
- Implemented data visualization to analyze datasets obtained from evaluation studies with a focus on understanding social interactions and model evaluations within the system.

University of California San Diego **2023**
Research Intern at Halıcıoğlu Data Science Institute, Advisor: Haojian Jin *La Jolla, CA, USA*

- Developed a human-AI system powered by large language models to facilitate knowledge assessment for teachers by generating a set of targeted multiple-choice questions.
- Proposed a design pattern to ensure the diversity while maintaining the accuracy of generated content in human-AI systems powered by large language models.
- Conducted evaluation studies to investigate the effectiveness and efficiency of the proposed system in generating multiple-choice questions for assessing conceptual learning outcomes.

SenseTime Research **2022**
Research Intern at Natural Language Processing Group *Beijing, China*

- Proposed a large language model with capabilities of explaining the fundamentals, chain of thoughts, and common mistakes for most natural language processing samples.
- Validated the data enhancement capability of the prompts generated from the proposed model through instruction finetuning on various dataset.

Tsinghua University **2022**

Research Intern at Department of Computer Science and Technology, Advisor: Yuntao WangBeijing, China

- Proposed a modeling framework for balancing the trade-off between privacy preserving and activity recognition in smart homes under different resolutions.
- Investigated the effect of image resolution on both human and machine's performance on activity recognition task and privacy awareness through user studies and computer vision experiments.

Honors

Research Excellence Scholarship, Tsinghua University, 2023
Social Service Excellence Scholarship, Tsinghua University, 2023
Social Service Excellence Scholarship, Tsinghua University, 2022
Academic Performance Excellence Scholarship, Tsinghua University, 2021
Comprehensive Excellence Scholarship (Top 10%), Tsinghua University, 2020
Freshmen Scholarship (Top 10%), Tsinghua University, 2019

Skills

Programming: Python, C/C++, JavaScript/CSS/HTML, Java, R, Matlab, Verilog, VHDL.
Machine Learning: PyTorch, TensorFlow.
Web Framework: React, Vue, Django.
Languages: Chinese (native), English (fluent, TOEFL 105), German.