ZIRUI CHENG

Department of Computer Science and Technology, Tsinghua University

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Education

Department of Computer Science and Technology, Tsinghua University   *Beijing, China*
B.E. in Computer Science and Technology and Economics and Finance   *Aug 2019 - Jun 2024 (Expected)*

- **GPA:** 3.87/4.00
- **Courses:** Software Engineering (A), Artifial Neural Networks (A), Fundamentals of Cybersecurity (A), Introduction to Database Management System (A), Object-Oriented Programming (A),Principles of Politics (A+), Introductory Psychology (A-).

Interest

Human-Computer Interaction, Software Engineering, Privacy and Security.

Publications

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

Research Experience

University of California San Diego   *La Jolla, California, USA*
Halıcıoğlu Data Science Institute, Advisor: Haojian Jin   *2023 Spring*

- Propose an AI-infused system to generate multiple-choice questions for knowledge assessment to replace knowledge-based open-ended questions in the face of cheating risks brought by generative AI.
- Introduce the Explore-Validate-Generate interaction pattern to leverage the knowledge embedded within large language models and breaks down a knowledge-based open-ended question into a series of multiple-choice questions.
- Conduct user studies to investigate the feasibility of generative AI in educational tasks validate the effectiveness of generated questions in assessing students' conceptual learning outcomes.

SenseTime Technology   *Beijing, China*
Natural Language Processing Group   *2022 Fall*

- Propose a large language model — TeacherLM-7.1B with capabilities of explaining the fundamentals, chain of thoughts, and common mistakes for most natural language processing (NLP) samples.
- Validate the data enhancement capability of the prompts generated from TeacherLM-7.1B through instruction finetuning on various dataset.

Tsinghua University   *Beijing, China*
Department of Computer Science and Technology, Advisor: Yuntao Wang   *2022 Summer*

- Propose a framework with ajustable parameters for modeling the trade-off of visual privacy preserving activity recognition under different resolutions using images and videos collected from multimodal applications.
- Investigate the effect of the image resolution on both human and machine's performance on activity recognition task and visual privacy awareness through user studies and computer vision experiments.

Honors

2022	**Social Service Excellence Scholarship**, Tsinghua University	*Beijing, China*
2021	**Academic Performance Excellence Scholarship**, Tsinghua University	*Beijing, China*
2021	**First Prize (top 1%)**, Chinese Undergraduate Students' Physics Competition	*Beijing, China*
2020	**Overall Excellence Scholarship (top 10%)**, Tsinghua University	*Beijing, China*
2019	**Freshmen Scholarship**, Tsinghua University	*Beijing, China*

Skills

Programming	Python, C/C++, JavaScript, Java, R, SQL, Matlab.
Frameworks	React, Django, Vue
Languages	Chinese (native proficiency), English (professional proficiency, TOEFL: 102).