

# 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), Artificial 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

Hacıoğlu 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 adjustable 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

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|------|---|----------------|
| 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 (top 10%), 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).