

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

Major in Computer Science and Technology, Minor in Economics and Finance

Jul 2021 - Current

- **GPA:** 3.87/4.00
- **Courses:** Software Engineering (A), Artificial Neural Networks (A), Java Programming and Training (A), Introduction to Artificial Intelligence (A-), Introduction to Database Management System (A), Object-Oriented Programming (A), Data Structures, Computer Organizations, Computer Networks.

School of Economics and Management, Tsinghua University

Beijing, China

Major in Economics and Finance, Minor in Computer Science and Technology

Aug 2019 - Jun 2021

- **Courses:** Econometrics (A), Intermediate Microeconomics (A-), Intermediate Macroeconomics (A-), Principles of Politics (A+), Introductory Psychology (A-), Corporate Finance (A-).

Interests

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

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

TreeQuestion: Using Multi-layer Multi-choice Questions to Mitigate the Cheating Risks through Generative AI

La Jolla, California, USA

Undergraduate Research Assistant, University of California, San Diego, Advisor:

Haojian Jin

Mar 2023 - Current

- Propose a system AI for university teachers and students to generate multi-layer multi-choice questions based on generative to mitigate the cheating risks of open-ended questions in the face of generative AI.
- Introduce the Ideation-Validation-Generation interaction pattern with generative AI to improve generation quality, which splits education tasks into a series of primitive stages.
- Conduct evaluation studies to investigate the feasibility of generative AI in educational tasks and investigate teachers' time in writing the questions and students' time in answering the questions.

TeacherLM: Teaching to Fish Rather Than Giving Fish, Language Modeling Likewise

Beijing, China

Research Intern, SenseTime Technology, Advisor: Mingjie Zhan

Oct 2022 - Jan 2023

- 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.

Modeling the Trade-off of Privacy Preservation and Activity Recognition on

Low-Resolution Images

Beijing, China

Undergraduate Research Assistant, Tsinghua University, Advisor: Yuntao Wang

Jun 2022 - Sep 2022

- 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

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

Skills

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