Yuehan Qiao

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EDUCATION

Tsinghua University (THU, QS Ranking 25) **Beijing, China**

Master of Information Art & Design, Academy of Arts & Design Sep. 2021 - June 2024 (Expected)

- GPA:3.83/4.0 (Expect to graduate in June 2024)
- Relevant coursework: Techniques of Human-Machine Interactive and Interface, Human-Robot Interaction, AI Fundamentals for Design Applications, Information Interaction and Innovation Design

Bachelor of Engineering, Department of Electronic Engineering Sep. 2017 - June. 2021

- Selected courses: Electronic Circuits and Systems, Digital Logic and Processor, Data and Algorithm, Signals and Systems, Statistical Signal Processing, Media and Cognition, Communications and Networks

PUBLICATIONS

Under Review / In Submission:

- Siyu Zha, **Yuehan Qiao**, Qingyu Hu, Zhongsheng Li, Jiangtao Gong, Yingqing Xu. Embrace Your Every Idea: Leverage Large Language Models to Support Project-Based Learning in Middle School Classroom. (Under review, *CHI '24*)
- **Yuehan Qiao**, Yun Wang, Zhihao Yao, Meiyu Hu, Weiwei Zhang, and Qianyao Xu. Connecting Wider Audiences with Virtual Co-presenter: Enhancing Accessibility and Engagement of Deaf and Hard-of-Hearing E-commerce Livestreaming. (Under review, *To be submitted to CSCW '24*)

Published:

- Zhihao Yao, **Yuehan Qiao**, Qianyao Xu. Research on Virtual Human Design in Smart Home[J]. *Journal of Computer-Aided Design & Computer Graphics*, 2023, 35(2): 221-229. doi: 10.3724/SP.J.1089.2023.20052
- Yunbing Chen, Ke Shen, Gang Yu, **Yuehan Qiao**, Xiangning Yan, Wuwei Zhang, and Yingqing Xu. 2022. EEG-Based Artistic Visualization of Dreams. *In The Ninth International Symposium of Chinese CHI (Chinese CHI 2021)*. Association for Computing Machinery, New York, NY, USA, 144–151. doi: 10.1145/3490355.3490376

RESEARCH EXPERIENCE

The Future Laboratory, Tsinghua University (Beijing, China) **12/2020 - Present**

Advisor: Professor Yingqing Xu

Virtual Co-presenter for DHH Livestreamers in E-commerce Livestreaming

Team Leader

- Identified the challenges in information conveying, emotion expression and viewers' watching intention in Deaf and Hard-of-Hearing (DHH) e-commerce livestreaming by conducting semi-structured interviews with 4 DHH livestreamers and 15 hearing viewers and analyzing in thematic analysis.
- Collaborated with designers on devise and implement a 3D cartoon virtual human assistant system with accentuated information broadcast and emotionally enhanced animations using Blender and Unity.
- Designed the comparison experiments to evaluate the system's impact on user experience through semi-structured interviews and quantitative scale.
- Author a paper -as first author- to be submitted to CSCW 2024.

Optimization of Typing Experience for Zero-travel Keyboard

Team Leader

- Created a patent-pending zero-travel keyboard with integrated sensing and vibration feedback using piezoelectric ceramics, which dramatically improves the typing experience.

- Discovered the usefulness of piezoelectric ceramic sensing and vibration function by embedded programming on an STM32-based development board.
- Developed software for parameter control and display by using PyQt5.
- Led my team to measure micro-vibration acceleration, trigger momentum and noise levels, and conducted a user study involving 24 participants to determine preferred typing experience parameters.

Leverage LLMs to Support Project-Based Learning (PBL) in Middle School Classroom

Core Member

- Discovered LLMs can boost PBL and surveyed students' varied trust and complex perspectives on LLMs' impact to their creativity through two 48-hour LLM-involved PBL instructional programs for middle school students.
- Designed and implemented the PBL course and experiments with teaching team. Trained 10+ teaching assistants and providing supports throughout the instructional process.
- Conducted semi-structured interviews with 30+ students and 7 teaching assistants with two other members. Analyzed data by applying inductive thematic analysis approach.
- Co-authored a paper submitted to CHI 2024.

Olfactory Perception and Recognition of Robotic Dog

Core Member

- Launched a robotic dog with olfactory perception for commercial use by using a novel electronic nose composed of 19 MEMS gas sensors.
- Contributed to the embedded development of the electronic nose and the development of visualization software for data collection.
- Responsible for data collection and processing. Delivered a stable classification models within 3s odor sampling time independently, reaching 96% accuracy on practical tests in home environments.

WORK EXPERIENCE

Apple R&D (Beijing) Limited Shanghai Branch (China) Nov. 2023 - Present

Position: Apple input device Product Design Intern

- Develop and optimize hardware for input device prototypes with new sensing and feedback technologies.
- Build prototypes' test platform and control software.

Tsinghua University Academy of Art & Design (Beijing, China) Mar. 2022 - May. 2022

Position: Teaching Assistant

- Helped teach course 'Advanced Information Technology and Its Application in Design'.
- Prepared slides and course materials for a class of 20+ students by searching and organizing articles and informational videos related to manufacturing and tools from HCI conferences.
- Graded weekly assignments and provided constructive feedback.

ADDITIONAL INFORMATION

Language:

- Mandarin Chinese (native), English (TOEFL: 106)

Skills:

- Programming: Python, C, C++, MATLAB, LaTeX, Verilog, HTML+CSS, JavaScript, Processing, Arduino
- Software: SPSS, Altium Designer, Modelsim, Adobe Photoshop, Adobe Lightroom, Figma, DaVinci
- Qualitative & Quantitative methods, Design thinking, Interviews, Workshops, Teaching experiments, Storyboards, Prototyping, Wizard-of-Oz, Thematic analysis, User experiment

Awards:

- Tsinghua University Sports and Artistic Activities Excellence Scholarship (2019, 2020, 2021)