Ziqi Liu

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EDUCATION

Tsinghua University — 2021 — Expected 2025

- B.Eng. in Automation
- GPA: 3.74/4.0
- I was enrolled in a 4-year interdisciplinary undergraduate program of Creative Design and Intelligent Engineering, where we took courses from Electrical Engineering and Computer Science (main part), Mechanical Engineering, Interaction and Industrial Design.
- Core Courses: Data Structure | Pattern Recognition and Machine Learning | Principles of Artificial Intelligence | Fundamentals of Analog Electronics | Digital Electronics | Signals and System Analysis | Engineering Mechanics A | Fundamentals of Mechanical Design | User Experience Design | Interaction Design

RESEARCH EXPERIENCES

Future Lab, Tsinghua University — 03/2024 — Present

AroMR: Designing Olfactory Experiences for Spatial Computing Scenarios in Mixed Reality

Co-led the project of AroMR, which focused on designing the 'field-centric' olfactory rendering strategy for mixed reality, with a proof-of-concept system and exploration of potential olfactory scenarios and design spaces.

- Literature Review and Project Conception
- System Design and Prototyping
- Paper Writing

Pervasive HCI Group, Tsinghua University — 06/2024 — Present

Enhancing Smartphone Eye Tracking with Cursor-Based Interactive Implicit Calibration

We introduce COMETIC (Cursor Operation Mediated Eye-Tracking Implicit Calibration), which uses cursor-eye movement correlation to enhance tracking accuracy. By filtering cursor coordinates as gaze proxies and fine-tuning with related images, COMETIC reduces tracking error to 208.04 px (1.2 cm), improving accuracy by 49.64%. Optimal results occur with cursor points 250-300 px (1.44-1.73 cm) from the gaze.

- Data Collection System Development
- User Experiments and Data processing

AI-Assisted Art Training: AI for Enhancing Artistic Skill Development in Calligraphy and Painting

Designed and developed a data collection platform to gather information such as pressure and pen posture during the calligraphy process. Collected datasets through user experiments and built a model to master artistic skills using representation learning.

- Literature Review and Project Conception
- Data Collection Application Development
- User Experiments and Interviews
- Data Processing and Model Training

PUBLICATIONS

- Chang Liu, Xiangyang Wang, Chun Yu, Yingtian Shi, Chongyang Wang, **Ziqi Liu**, Chen Liang, Yuanchun Shi. 2024. Enhancing Smartphone Eye Tracking with Cursor-Based Interactive Implicit Calibration. Submitted to *CHI 2025* (under review)

OTHER EXPERIENCES

Huawei & Future Lab, Tsinghua — 10/2023 — 03/2024

Team Member | Project: Design Research of Future Terminal

- Desk research on innovations in technology, form, and interaction modes of smart terminals
- Concept design of the interaction and application of HMD devices, with low-fidelity demos.

Mercedes Benz, Beijing & Future Lab, Tsinghua — 06/2024 — Present

Research Intern | Project: Towards Sustainable Car Interior Design with Smart Interactive Material

- Desk research on interactive materials in HCI
- Design and fabricate the high-fidelity demo for interior design with interactive materials, primarily responsible for lighting effects design and circuit implementation.

Skills

CS: basic AI methods, Python, C/C++, HTML

EE: circuit design, Verilog, Arduino

Design: AutoCAD, Solidworks, Figma, Adobe suit, Unity, Blender

English: CET-4: 648; TOEFL: 99