Qinyi Zhou （周沁怡）

HCI Researcher | Product Designer

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https://qinyizhou2023.github.io/

Education info

Tsinghua University

2022 – 2025 (Expected)

Industrial Design | Supervised by: Prof. Yingqing Xu, Prof. Sai Ma

M.S.

3.97/4.0

Courses: Human-Computer Interaction Technology, Frontier of Information Technology & Design Application.

Tsinghua University

2018 - 2022

Product Design

B.S.

3.82/4.0

Courses: Product Interface Semantic Design, Design Thinking, User Research Methods, Integrated Design Expression, 3D Modeling Basics.
Thesis: *Mobile ECMO: Redsign of the Extracorporeal Membrane Oxygenation – Outstanding Graduation Design.*

Research Experience

Microsoft Research Asia

Oct 2023 – March 2025

Research Intern (Engineering Foundation Grooup) | Collaborated with Scarlett Li and Yu Liu

Beijing, China

- Conducted formative study (N=10) to identify novice designers' challenges when ideating metaphorical product design.
- Developed ProductMeta, an **interactive human-AI co-creation system for ideation and iteration for novice designers in metaphorical product design**.
- Through a user study (N=16), the system demonstrated a 23% higher sense of exploration (CSI=8.13 vs 6.63), 13% higher sense of worth effort (CSI=7.19 vs 6.38), 3.2× cross-phase transitions compared to GPT-4o, evidencing effective **non-linear workflow** support.
- The research was accepted by CHI 2025.

University of California, Los Angeles

Jul 2024- March 2025

Visiting Scholar (HCI Lab) | PI: Prof. Xiang Anthony Chen & Prof. Sherry Tongshuang Wu.

Los Angeles, USA

- Developed a computational framework to **quantify overreliance on human-AI collaboration through behavioral telemetry.**
- Process: Built Chrome extension for real-time interaction logging; Applied gradient-boosted decision trees (XGBoost) to evaluate the regression performance for correlation analysis; Behavior sequence analysis using LLMs; Semi-structured interviews for qualitative analysis of users' intents.
- Developed a metacognition-behavioral framework to illustrate overreliance-related behaviorals. Identified two key behavioral signatures across three human-AI interaction scenarios (N=77): 1) copy-paste length (β=+0.35, $p<0.05$) positively correlating with overreliance, 2) the higher task page interaction frequency, the less overreliance tendency.

Pervasive HCI Group, Tsinghua University

Jun 2023- Aug 2023

Research Intern

Beijing

- Developed Docent, a system designed to **support novice users searching and utilizing the tutorial.** Powered by LLMs, Docent takes vague user input and recent digital operation contexts to reason, seek, and present the most relevant tutorials in situ.
- My contribution: System framework design and UX design.
- The project won UIST SIC'2023 honorable mentioned award.

Publications

ProductMeta: An Interactive System for Metaphorical Product Design Ideation with Multimodal Large Language Models

CHI 2025

Qinyi Zhou, Jie Deng, Yu Liu, Yun Wang, Yan Xia, Yang Ou, Zhicong Lu, Scarlett Li*, Yingqing Xu*

Docent: Digital Operation-Centric Elicitation of Novice-friendly Tutorials — **UIST SIC' 2023 | Honorable Mention Award**
Yihao Zhu, Qinyi Zhou

The Application and Development of Artificial Intelligencein the Design Industry（人工智能在设计产业中的应用及发展） — **Packaging Engineering 2024**
Yingqing Xu, Qinyi Zhou, Jie Deng, Yu Zhang, Xinyi Fu*

Patents

Mobile Extracorporeal Membrane Oxygenation (ECMO) - Design patent — **Jul 2023**

Mobile Extracorporeal Membrane Oxygenation (ECMO) - Patent for utility models — **Nov 2023**

Awards & Honors

Microsoft Hackathon - Global Hackathon Peter's Executive Challenge (top 5/ 1000+) — **Oct 2024**
Microsoft

UIST Student Innovation Contest - Honorable Mention — **Oct 2023**
The ACM Symposium on User Interface Software and Technology (UIST)

Future Design Education Competition - Gold Award — **Aug 2023**
UNESCO Institute of Information Technology and others

Tsinghua First-Class Comprehensive Excellence Scholarship — **Oct 2023, Oct 2021; Oct 2020**
Tsinghua University

Outstanding Graduation Design — **Jun 2022**
Tsinghua University, Academy of Arts and Design

Outstanding Graduate — **Jun 2022**
Tsinghua University

Xiamen Design & Art Week 2024 — **March 2024**
Xiamen Media Group Co., Ltd. & Red Dot Design (Xiamen) Brand Operation Co., Ltd

Youth Design 100 Exhibition (Online) — **Jun 2022**

Asian New Generation Designer (Online) - Excellence Award — **Aug 2022**

Gold Award for Social Practice — **Oct 2019**
Tsinghua University

Projects

ProductMeta: An Interactive System for Metaphorical Product Design Ideation with Multimodal Large Language Models
Human-AI co-creation
https://productmetaphor.github.io/productmeta.github.io/

- ProductMeta is an interactive system powered by GPT-4o to **support diverse idea exploration while considering physical requirements and functional constraints in metaphorical product design**. It enables a non-linear, controllable design workflow.
- Through a user study (N=16), the system demonstrated a 23% higher sense of exploration (CSI=8.13 vs 6.63), 13% higher sense of worth

effort (CSI=7.19 vs 6.38), 3.2× cross-phase transitions compared to GPT-4o, evidencing effective **non-linear workflow** support.

- My contribution: Conducted semi-structured interviews, thematic analysis, literature review of design theory, prompt engineering, and full-stack UX design.

Detecting Overreliance on Conversational LLM from Interaction Behaviors

March 2024 - now

Human-AI Interaction; behavior modeling

- Developed a **computational framework to quantify overreliance on human-AI collaboration through behavioral telemetry**. We collect behavioral data during use and **conduct regression on the relationship between the overreliance metric and behavioral features**.
- My contribution: Built Chrome extension for real-time interaction logging in three representative AI application scenarios; Regression analysis (overreliance correlation) with Seaborn/Matplotlib visualization; Behavior sequence analysis using LLMs; Semi-structured interviews for qualitative analysis of users' intents
- Key findings: Identified two key behavioral signatures across three human-AI interaction scenarios (N=77): 1) copy-paste length (β=+0.35, $p<0.05$) positively correlating with overreliance, 2) task page interaction frequency reducing dependency.

Speaking Across Time with Da Vinci - AI-Powered Virtual Dialogues

Nov 2023 - Jan 2024

Media work

- A media work that employs virtual human technology to create a dialogue with Leonardo da Vinci. It connects the historical figure with students from modern-day Universities, enabling a cross-temporal conversation.
- My contribution: Visual System Architecture, and dialogue design.
- Recognization:
  - **<Official Selection>** Xiamen Design & Art Week 2024

Cuby and His Shadow Friend: A Game-Based STEAM Learning Book for 6-9 Kids

Jan 2023 - Sep 2023

Interaction Design

- Developed an embodied-learning STEAM picture book to teach light & shadow principles and knowledge to children aged 6–9 in a parent-child reading scenario.
- Developed through participatory co-design with educators and caregivers, the multisensory framework incorporates Arduino-driven tactile-auditory modules, layered narrative structures, and pedagogically progressive integration of storytelling with scientific concepts.
- My contribution: Interaction design, UX design, and visual design.
- **Recognition**:
  - <**Gold Award>** Future Design Education Competition | <**Silver Award>** Singapore Art Design Competition.
  - Published to Springer.

Mobile ECMO: Redsign of the Extracorporeal Membrane Oxygenation

Feb 2022 -Jun 2022

Undergraduate thesis, product design, UX design

- Designed an integrated mobile extracorporeal membrane oxygenation system (Mobile-ECMO) for pre-hospital emergency care scenarios to reduce delays in patient transportation and improve emergency treatment efficiency during critical transfers.
- Key product optimizations: 2 mobile scenario adaptation strategies (storyboard), user interface, integration of the main console, water tank, and trolley modules. Achieved enhanced portability and environmental adaptability.
- **Intellectual Property & Recognition**
  - 2 patents: Design Patent, Utility Model
  - Tsinghua Outstanding Graduation Design | Asian New Generation Designer Excellence Award

CCTV New Year's Gala (2022) and Labour Day Gala Stage Art Design

Dec 2022 - May 2023

Visual Design

- Visual design for CCTV's 2023 New Year Gala at Tsinghua University Academy of Arts & Design, coordinating remote teams to deliver stage concepts. Collaborated with Prof. Fan Yinliang and Prof. Zhang Lei, implementing adaptive design strategies that seamlessly integrated artistic vision with real-time production demands for China Central Television's flagship program.

Internship Experience

Meituan

Jul 2021 - Sep 2021

Interaction Design Intern (Home Delivery Division)

Beijing

Improved the search page interface based on user and merchant needs to enhance user experience and search results. Redesigned the shopping cart-to-order process based on user purchasing habits.

Midea Global Innovation Center

Jul 2021 – Sep 2021
Foshan, China

Interaction Design Intern

Part of the UXI team in Midea's Household Air Conditioning Business Unit's Industrial Design Center. Involved in interaction design for Midea Home APP and graphic design for Midea Disney series air conditioner panels.

Leadership Experience

Director of the Academic Department

Jul 2023- Jul 2024

Graduate Student Union of Tsinghua University

Organized 8 academic activities in the Academy whithin 1 year, such as the Tsinghua University Doctoral Forum and the “Path to Academia” lecture series, contributing my efforts toward academic dissemination among the Academy.

Publicity Team Leader, Academic Department

Jul 2020 - Sep 2021

Tsinghua University Student Union

Visual design for various academic events at Tsinghua University, including the visual system design for the "8th My Favorite Teacher" selection event.

Social Practice and Volunteering

Xi'an Intangible Cultural Heritage Modernization Pathways Study

Jul 2020 - Sep 2021
Xi'an

Tsinghua University Social Science Practice Fund Supported Project
https://feiyi.youth.cn/tt/202009/t20200903_12479193.htm

- Conducted interviews and field investigations with 2 national-level intangible cultural heritage inheritors, 4 cultural innovation enterprises (spanning digital cultural tourism, IP development, and craft innovation sectors), 2 intangible cultural heritage museum, and policy analysis in collaboration with Xi’an Municipal Bureau.
- Authored a research report proposing a "Technology Empowerment–Scenario Revitalization–Industry Synergy" tripartite transformation model.
- Awarded **Tsinghua University Social Practice Gold Award** (top 15%).

Investigation of Cultural Creativity Industry in Beijing

Jun 2020 - Aug 2020
Beijing

Summer fieldwork

- Conducted semi-structured interviews with 4 C-suite executives across 6 creative industry organizations to understand the development of **cultural creativity** in China.

Volunteered Teaching Art

Dec 2019 - Jan 2020
Hainan, China

Art and art history teaching

- Undertook a one-month art and art history teaching assignment at the Innovative School in Lingao County, Hainan Province.

Skills

UX Design

Expert

Figma, Adobe XD, PS, AI, PR

User Research

Expert

Think-Aloud Protocol, Themantic Analysis, Data Analysis & Statistics: Hypothesis testing (p-value, t-test, ANOVA).

Product Design

Expert

Rhino, Blender, Keyshot, Grasshopper

AI-Driven Design

Expert

Stable Diffusion, MidJourney, Prompt Engineering.

Prototyping & Development

Frontend Development: Python-based web frameworks, HTML/CSS, Chrome Extension development; Data processing (Pandas & NumPy), visualization (Matplotlib & Seaborn). **Very Skilled**

Cross-Disciplinary Collaboration

Design Thinking, Stakeholder Communication Very Skilled

Languages

Chinese

Native

English

TOFEL 100

Interests

Traveling, Photography, Model Making

Summary

As a multidisciplinary researcher at the intersection of AI and design (AI4Design), I am passionate about designing systems that amplify human creative thinking and preserve agency in human-GenAI co-creation. My strong foundation in industrial design (Tsinghua, GPA: 3.97/4.0) and HCI research (Microsoft Research Asia, UCLA) equips me with a unique perspective to address this challenge.
My design training at Tsinghua cultivated a human-centered approach, design thinking, and rigorous user research. At Microsoft Research Asia, I developed ProductMeta (CHI 2025), demonstrating how structured user interfaces can enhance creative exploration. Designers using ProductMeta achieved broader metaphorical exploration (CSI=8.13 vs. 6.63) and a non-linear design process compared to GPT-4o. However, my research at UCLA highlighted a critical issue: users exhibit overreliance behaviors and adopt AI misinformation due to metacognitive challenges. These experiences revealed that while GenAI significantly expands automation capabilities for creative tasks, it currently falls short of achieving authentic creativity and poses risks of overreliance and diminished human agency in co-creation scenarios. My research aims to address these challenges by investigating:

- How GenAI influences human creative workflows and cognitive processes.
- How to design AI systems that support creative thinking while mitigating cognitive biases and overreliance.

To this end, I propose a shift from automation to provocation AI, characterized by:

- Metacognitive Sensing: Tracking creative flow and divergent-convergent thinking through multimodal signals.
- Adaptive Scaffolding: Shifting AI roles from solution provider to thought stimulator (e.g., evaluator, challenger, debater).

With 3 publications and 2 patents, I bring proven expertise in:

- Designing human-AI interaction and co-creation experiences (Figma/React prototyping) by applying interaction theories and design practices.
- Conducting quantitative and qualitative research to analyze the system (Data analysis and thematic analysis).