

Qingyu Hu

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EDUCATION

Tsinghua University, Beijing, China (QS 17)

09/2022-07/2025

Master of Arts in Design (Industrial Design)

GPA: 3.84/4.0

- 2025 Outstanding Graduate of Beijing (Top 5%)
- 2025 iF DESIGN AWARD
- 2024 Tsinghua University Outstanding First-Class Scholarship

Beijing Institute of Technology, Beijing, China (985 211)

09/2018-07/2022

Bachelor of Arts in Product Design

GPA: 3.9/4.0 (Rank: 1/43)

- 2020 National Scholarship (Top 1%)
- 2019, 2020 The First Prize Scholarship of Beijing Institute of Technology

RESEARCH INTERESTS

Game-based Learning, Serious Game, Mixed Reality, Human-computer Interaction

PUBLICATION

Hu, Q., Li, Z., & Chen, L. (2025). Designing a Cross-scale Gamified Learning System for Circuit Education: Bridging Macro and Micro Cognitive Scales. In Proceedings of IASDR 2025. Taipei, China.

Hu, Q. & Li, Z. (2025). “‘Seeing’ Electricity: Exploring Middle School Students’ Experiences in a Kinect-based Sound Visualization Circuit Learning Game.” HCII 2025 – Human-Computer Interaction International Conference, Late Breaking, Springer CCIS .

Hu, Q., Wu, H., Cao, H., & Hua, M. (2025). Do Virtual Coaches Teach Differently? A Mixed-Reality Study of Linear, Nonlinear, and Differential Pedagogies for Motor Skill Learning. IEEE Transactions on Learning Technologies (TLT) — under review.

Zha, S., Qiao, Y., Hu, Q., Li, Z., Gong, J., & Xu, Y. (2025). [Designing child-centric AI learning environments: Insights from an LLM-powered creative project-based learning study](#). International Journal of Human-Computer Studies, 103602. (JCR Q1, IF : 5.1)

Ma, S., Hu, Q., Chen, Y., Zhao, Z., & Li, H. (2023, March). [Social Bots that Bring a Strong Presence to Remote Participants in Hybrid Meetings](#). In Companion of the 2023 ACM/IEEE International Conference on Human-Robot Interaction (pp. 853-856).

Yu, T., Fan, Y., Zhang, Z., Hu, Q., Xu, W., Mi, H., & Mueller, S. (2024, May). [Thermaterial: Program Ambient Heat Transfer Behaviors on Objects through Fluidic Composites](#). In Extended Abstracts of the CHI Conference on Human Factors in Computing Systems (pp. 1-8).

Zhao, Z., Chen, Y., Hu, Q., Ma, S., Li, H., Guo, Y., & Mi, H. (2023, March). [Buzzo or Eureka--Robot that Makes Remote Participants Feel More Presence in Hybrid Discussions](#). In Companion of the 2023 ACM/IEEE International Conference on Human-Robot Interaction (pp. 323-327).

RESEARCH PROJECT

Graduate Thesis Project: Cross-Scale Gamified Learning System for Circuit Education

06/2024-05/2025

Tsinghua University

Gap: K-12 STEM frequently struggles to bridge macro hands-on practice with micro-level mechanisms, limiting learners’ representational competence for abstract, dynamic systems.

Domain Focus: We target LC resonance in physics as a canonical, conceptually demanding topic where learners rarely

connect circuit assembly with electron-level oscillation dynamics.

Solution: Designed a dual-module cross-scale intervention that couples (1) projection-guided tangible LC assembly (macro) with (2) a Kinect-based first-person “electron” simulation (micro), achieving real-time macro–micro alignment.

Empirical Findings: Mixed-methods pre–post study with middle-school students (N=20) showed statistically significant gains in conceptual understanding, engagement, and learner initiative ($p < .01$). Demonstrates that cross-scale embodied learning effectively bridges macro practice and micro mechanisms for abstract circuit concepts; the design pattern is generalizable to other STEM topics involving invisible dynamics (e.g., waves, optics).

Publications: IASDR 2025 full paper; HCII 2025 late-breaking work (Springer CCIS).

Designing AI-Enhanced Learning Tools for Children's Creativity

08/2022-10/2023

Tsinghua University Research Assistant

Collaborative Project Initiated by the LEGO Foundation and Tsinghua University

Projects encompassed: organizing multiple children's workshops to explore the impact of AI and the environment on children's creativity, authoring a government report on the theories and methodologies for designing innovative learning toys, and designing and developing Arduino-based construction toys for children.

Publications: IJHCS 2025 journal article; Government report: The Theory and Method of Innovative Learning Toy Design.

Augmented Reality Exergame for Promoting Learning Outcomes in Sports

03/2024-08/2024

Tsinghua University Team leader

This project investigates whether virtual coaches teach differently under distinct practice structures. We built SmashMate, a HoloLens-2 mixed-reality exergame that operationalizes three pedagogies—Linear (repetitive, goal-directed practice), Nonlinear (constraints-led variability), and Differential (perturbation-based exploration). In a counterbalanced within-subjects study on badminton footwork, we captured kinematic performance, movement efficiency, retention/transfer, and user-experience measures. Findings reveal mode-specific learning patterns and design implications for pedagogy-aware virtual coaches.

Publications: IEEE Transactions on Learning Technologies (TLT) 2025 journal article — under review

ACADEMIC INTERNSHIPS

Lab for Lifelong Learning, Tsinghua University — — Research Assistant

03/2021-10/2022

The Future Laboratory, Tsinghua University — — Research Intern

11/2022-05/2024

AWARDS

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| ➤ 2025 Outstanding Graduate of Beijing (Top 5%) | 06/2025 |
| ➤ 2025 iF DESIGN AWARD (Professional Concept) | 04/2025 |
| ➤ Tsinghua University Outstanding First-Class Scholarship, ¥1,0000 | 10/2024 |
| ➤ 2024 MUSE Creative Awards Gold Winner | 09/2024 |
| ➤ Key Project for Graduation Design (Thesis) of Undergraduate Students | 06/2022 |
| ➤ 2020 National Scholarship, ¥8000 | 10/2021 |

SKILLS

Tools: Unity, Rhino, Blender, Unreal Engine, SPSS

Language: English (IELTS: 6.5, L/R/W/S ≥ 6), Chinese (native)

Program: Python, HTML

Quantitative: experiments, surveys, logging/A-B tests; ANOVA/ANCOVA, regression & mixed-effects; power & effect sizes.

Qualitative: interviews, focus groups, observation/think-aloud, diary studies; thematic coding (NVivo), inter-rater reliability (Cohen's κ).