Zixin (Steven) Chen

+852-93720681 | zchendf@connect.ust.hk | Website
Linkedin | Github | Scholar

Research Focus

My research lies at the intersection of Human-Computer Interaction, Data Visualization, and AI, with a focus on **building human-centered systems that leverage Large Language Models (LLMs) for education (AI4Edu)**. I design interactive tools that support teaching and pedagogical decision-making, personalize learning experiences, and make LLM behavior more trustworthy for both learners and educators. In parallel, I build LLM-driven models optimized for educational contexts and explore their broader applicability in domains such as healthcare (AI4Health).

Education

- **The Hong Kong University of Science and Technology** *Sep. 2022 - Aug. 2026 (expected)*
  Ph.D. in Computer Science Hong Kong SAR, China
  Advisor: Prof. Huamin Qu
- **The Hong Kong University of Science and Technology** *Sep. 2018 - June 2022*
  BSc in Data Science and Technology, Minor in Business Hong Kong SAR, China

Publications and Preprints

C=Conference, J=Journal, P=Poster, U=Under Review

[U.1] **Zixin Chen**, Yuhang Zeng, Meng Xia, Sicheng Song, Yanna Lin, Xian Xu, and Huamin Qu
VizQStudio: Iterative Visualization Literacy MCQs Design with Simulated Students.
VIS 2025 – *Submitted manuscript, under review.*

[U.2] **Zixin Chen**, Jiachen Wang, Yumeng Li, Haobo Li, Chuhan Shi, Rong Zhang, and Huamin Qu
CoGrader: Transforming Instructors' Assessment of Project Reports through Collaborative LLM Integration.
UIST 2025 – *Submitted manuscript, under review.*

[U.3] **Zixin Chen**, Sicheng Song, Kashun Shum, Yanna Lin, Rui Sheng, and Huamin Qu
Unmasking Deceptive Visuals: Benchmarking Multimodal Large Language Models on Misleading Chart Question Answering.
ACL 2025 – *Submitted manuscript, under review.*

[U.4] Rui Sheng, Zelin Zang, Jiachen Wang, Yan Luo, **Zixin Chen**, Yan Zhou, Shaolun Ruan, and Huamin Qu
CellScout: Visual Analytics for Mining Biomarkers in Cell State Discovery.
VIS 2025 – *Submitted manuscript, under review.*

[U.5] Rui Sheng, Yukun Yang, Chuhan Shi, Yanna Lin, **Zixin Chen**, Huamin Qu, and Furui Cheng
DiLLS: Interactive Diagnosis of LLM-based Multi-agent Systems via Layered Log Summary.
UIST 2025 – *Submitted manuscript, under review.*

[U.6] Rui Sheng, Yukun Yang, Yanna Lin, Sicheng SONG, Zelin Zang, Haobo Li, **Zixin Chen**, and Huamin Qu
AgentExplainer: Visually Explain the Collaborative Process of LLM-based Multi-agents for Clinical Decision-making.
ACL 2025 – *Submitted manuscript, under review.*

[C.1] **Zixin Chen**, Jiachen Wang, Meng Xia, Kento Shigyo, Dingdong Liu, Rong Zhang, and Huamin Qu
StuGPTViz: A Visual Analytics Approach to Understand Student-ChatGPT Interactions.
VIS 2024 - *IEEE Transactions on Visualization and Computer Graphics*, vol. 31(1), pp. 908 - 918, 2025.

[C.2] KaShun Shum, Minrui Xu, Jianshu Zhang, **Zixin Chen**, Shizhe Diao, Hanze Dong, Jipeng Zhang, and Muhammad Omer Raza
FIRST: Teach A Reliable Large Language Model Through Efficient Trustworthy Distillation.
EMNLP 2024 - *Proceedings of the 2024 Conference on Empirical Methods in Natural Language Processing*, pp. 12646–12659

[C.3] Qian Zhu, Dakuo Wang, Shuai Ma, April Yi Wang, **Zixin Chen**, Udayan Khurana, and Xiaojuan Ma
Towards Feature Engineering with Human and AI's Knowledge: Understanding Data Science Practitioners' Perceptions in Human&AI-Assisted Feature Engineering Design.
DIS 2024 - *Proceedings of the 2024 ACM Designing Interactive Systems Conference*, pp. 1789 - 1804

[C.4] Dingdong Liu, Sensen Gao, **Zixin Chen**, Yifan Shen, Chuhan Shi, Bertram E Shi, and Xiaojuan Ma
Exploring Scaffolding Techniques for Agent-Administered Brief Cognitive Screening in Hospital Settings.
DIS 2024 Companion - *Companion Publication of the 2024 ACM Designing Interactive Systems Conference*, pp. 185 - 189

[C.5] Jianben He, Xingbo Wang, Kam Kwai Wong, Xijie Huang, Changjian Chen, **Zixin Chen**, Fengjie Wang, Min Zhu, and Huamin Qu
VideoPro: A Visual Analytics Approach for Interactive Video Programming.
VIS 2023 - *IEEE Transactions on Visualization and Computer Graphics*, vol. 30(1), pp. 87 - 97, 2024.

[P.1] **Zixin Chen**, Shiyi Liu, Zhihua Jin, Gaoping Huang, Yang Chao, Zhenchuan Yang, Quan Li, and Huamin Qu
Towards an Exploratory Visual Analytics System for Griefer Identification in MOBA Games.
VIS 2023 Poster - *IEEE Visualization Conference*

[U.7] Zhihua Jin, Gaoping Huang, **Zixin Chen**, Shiyi Liu, Yang Chao, Zhenchuan Yang, Quan Li, and Huamin Qu
Actorlens: Visual analytics for high-level actor identification in moba games.
Arxiv 2023

[C.6] Qian Zhu, Leo Yu-Ho Lo, Meng Xia, **Zixin Chen**, and Xiaojuan Ma
Bias-Aware Design for Informed Decisions: Raising Awareness of Self-Selection Bias in User Ratings and Reviews.
CSCW 2022 - *Proceedings of the ACM on Human-Computer Interaction*, vol. 6(CSCW2), pp. 1 - 31, 2022.

Projects and Grants

- **Design-aware Learning Analytics and Visualization Engine** *$1,400,000 HKD, Quality Education Fund, Hong Kong*
  Project Leader, Project Manager and Core Developer Apr. 2024 - Aug. 2026
  - Served as project leader for a six-member team, coordinating team organization and external communication
  - Led the writing of key documentation and delivered presentations, including the project tender, implementation plans, deliverables, and technical reports
  - Served as the core full-stack developer, independently responsible for the architecture and skeleton code of the frontend, backend, and database; also implemented part of the detailed functionality across all layers and coordinated task distribution among team members.

- **LLM-Driven Curriculum Design and Talent Development** *$600,000 HKD, JC-AI Research Scheme, HKUST & EduHK*
  Core Project Member Apr. 2025 - Aug. 2026
  - Contributed as a core project member in proposal writing and planning, including defining research questions, outlining core deliverables, estimating the budget, and co-authoring the proposal.

- **Visual Analytics for Generative AI-Assisted Learning** *$920,000 HKD, General Research Fund, Research Grants Council*
  Core Project Member Apr. 2024 - Dec. 2026
  - Served as the core project member responsible for implementing all three primary tasks of the project, along with their associated subtasks.
  - Served as the sole researcher leading and completing all publications derived from the project.

- **High-Dimensional Data Visualization for MOBA Game** *$500,000 HKD, Tencent*
  Core Project Member Sep. 2022 - July. 2023
  - Served as a core project member responsible for data analysis, backend AI algorithm design, frontend interface design, and full-stack system implementation.
  - Led research on visual analytics of MOBA players' in-game behaviors for griefer detection; published one poster paper and submitted one full conference paper (under review).
  - Delivered the final project presentation and prepared all supporting materials.

Honors, Awards

- **Postgraduate Studentship** *2022-2026*
  School of Engineering, HKUST
- **Dean's List** *2019-2021*
  School of Science, HKUST
- **City Change Maker (1st Place Winner)** *July 2019*
  Academy of Arts & Design, Tsinghua University

Invited Talks

- **IEEE VIS 2024:** VIS Full Papers - Collaboration and Communication *Oct. 2024*
- **ChinaVIS 2024:** Cutting-edge Paper Sharing *July 2024*

Mentoring Experience

- **Graduate Student**
  Xinli Zhu - Southeast University Jan. 2025 - Present
- **Undergraduate Student**
  Yuhang Zeng - HKUST Jan. 2025 - Present

Professional Services

- **Community Service**
  - *Student Volunteer - IEEE VIS 2024* — *Oct. 2024*
- **Conference Reviewing**
  - *IEEE VIS* — *2022 - 2025*
  - *ACM CHI & CHI-LBW* — *2022 - 2025*
  - *ACM CSCW* — *2024 - 2025*
  - *ACL* — *2024 - 2025*
  - *PacificVIS* — *2024 - 2025*
  - *ChinaVIS* — *2024 - 2025*
- **Journal Reviewing**
  - *IEEE TVCG* — *2022 - 2025*

Teaching Experience

- **COMP 2611:** Computer Organization (Teaching Assistant) — *2024 Fall*
- **MSBD 5005:** Data Visualization (Teaching Assistant) — *2024 Spring*
- **COMP 2611:** Computer Organization (Teaching Assistant) — *2023 Fall*
- **CORE 1232:** Exploring and Visualizing Data (Teaching Assistant) — *2023 Spring*

Skills

- **Programming Languages:** C/C++, Python, R, SQL, JavaScript/TypeScript
- **Tools:** GitHub, Oracle, HTML/CSS, Photoshop, InDesign, MySQL, PostgreSQL, Neo4j
- **Frameworks:** NumPy, Pandas, PyTorch, TensorFlow, D3.js, Vue, React
- **Languages:** Mandarin (Native), English (Professional Working Proficiency, TOEFL 108)