

Xinyu Shi

Ph.D. Candidate in School of Computer Science, University of Waterloo

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RESEARCH INTERESTS

I am a researcher in **Human-Computer Interaction (HCI)** and **Human-Centered AI**. I endeavor to answer the question of *how can we exploit the advances in AI automation to augment human creativity and steer creative possibilities*. To achieve this, I design, develop, and evaluate *meaningful* and *useful* interactive abstractions, which enable 1) powerful ways of thinking, 2) clear communication of intent, and 3) intuitive visual media authoring, and I leverage them in novel interactive systems for human–AI co-creation.

EDUCATION

- 2021 – Present **Ph.D. in Computer Science**
University of Waterloo, Canada
Advisor: Jian Zhao
- 2016 – 2020 **B.Eng. in Software Engineering**
Xiamen University, China

PROFESSIONAL EXPERIENCE

- Summer 2025 **Adobe Research**, Seattle, WA, USA (Remote)
Research Scientist Intern
Mentors: Rubaiat Habib Kazi, Li-Yi Wei, Cherry Zhao
Proposed a notational animating framework for keyframe authoring.
- Summer 2024 **Adobe Research**, San Jose, CA, USA
Research Scientist Intern
Mentors: Shunan Guo, Jane Hoffswell, Gromit Chan, Eunyee Koh
Designed and developed a sketch-based infographics authoring tool.
- Summer 2023 **Microsoft Research Asia**, Beijing, China
Research Scientist Intern
Mentor: Yun Wang
Designed and developed a color authoring tool for motion graphics video.

PEER-REVIEWED PUBLICATIONS (FULL PAPERS)

🏆 Best Paper Award; 🏅 Honorable Mention and Other Awards; * Equal Contribution.

Note about venues: In the field of Human-Computer Interaction (HCI), CHI and UIST are considered top tier venues for impactful work, with an annual acceptance rate of 20 - 25%.

- [P9] **Xinyu Shi**, Li-Yi Wei, Nanxuan Zhao, Jian Zhao, Rubaiat Habib Kazi. Notational Animating: An Interactive Approach to Creating and Editing Animation Keyframes. *Under Review at CHI 2026*.
under review
- [P8] **Xinyu Shi**, Chun Ye, Shunan Guo, Jane Hoffswell, Gromit Yeuk-Yin Chan, Eunyee Koh, Jian Zhao. Diagrammatic Sketching: Exploring Infographic Design Alternatives in Parallel. *Under Review at CHI 2026*.
under review
- [P7] **Xinyu Shi**, Yinghou Wang, Ryan Rossi, Jian Zhao. Brickify: Enabling Expressive Design Intent Specification through Direct Manipulation on Design Tokens. *Proc. ACM Human Factors in Computing Systems* (CHI 2025).
CHI 2025
- [P6] **Xinyu Shi**, Yinghou Wang, Yun Wang, Jian Zhao. Piet: Facilitating Color Authoring for Motion Graphics Video. *Proc. ACM Human Factors in Computing Systems* (CHI 2024).
CHI 2024
🏆 **Best Paper Award (Top 1%)**.
- [P5] **Xinyu Shi**, Mingyu Liu, Ziqi Zhou, Ali Neshati, Ryan Rossi, Jian Zhao. Exploring Interactive Color Palettes for Abstraction-Driven Exploratory Image Colorization. *Proc. ACM Human Factors in Computing Systems* (CHI 2024).
CHI 2024
- [P4] **Xinyu Shi**, Ziqi Zhou, Julia Zhang, Ali Neshati, Anjul Kumar Tyagi, Ryan Rossi, Shunan Guo, Fan Du, Jian Zhao. De-Stijl: Facilitating Graphics Design with Interactive 2D Color Palette Recommendation. *Proc. ACM Human Factors in Computing Systems* (CHI 2023).
CHI 2023
- [P3] Chaofeng Chen*, **Xinyu Shi***, Yipeng Qin, Xiaoming Li, Xiaoguang Han, Tao Yang, Shihui Guo. Real-World Blind Super-Resolution via Feature Matching with Implicit High-Resolution Priors. *Proc. ACM Multimedia* (MM 2022). 🏅 **Oral (Top 5%)**.
MM 2022
- [P2] Qijia Shao, Amy Sniffen, Julien Blanchet, Megan E. Hillis, **Xinyu Shi**, Themistoklis Haris, Jason Liu, Melissa Malzkahn, Lorna Quandt, James Mahoney, David J.M. Kraemer, Xia Zhou, Devin Balkcom. Teaching American Sign Language in Mixed Reality. *Proc. ACM Interactive, Mobile, Wearable and Ubiquitous Technologies* (IMWUT & Ubicomp 2021).
Ubicomp 2021
- [P1] **Xinyu Shi**, Junjun Pan, Zeyong Hu, Juncong Lin, Shihui Guo, Minghong Liao, Ye Pan, Ligang Liu. Accurate and Fast Classification of Foot Gestures for Virtual Locomotion. *Proc. IEEE Intl. Symposium on Mixed and Augmented Reality* (ISMAR 2019).
ISMAR 2019

LIGHTLY PEER-REVIEWED PUBLICATIONS (EXTENDED ABSTRACTS)

- [A1] CHI EA 2025 **Xinyu Shi**, Shunan Guo, Jane Hoffswell, Gromit Yeuk-Yin Chan, Victor S. Bursztyn, Jian Zhao, Eunyee Koh. Comprehensive Sketching: Exploring Infographic Design Alternatives in Parallel. *Extended Abstracts of ACM Human Factors in Computing Systems (CHI Late-Breaking Work 2025)*.

AWARDS

- 2024 **Best Paper Award** at ACM CHI 2024 as first author for Piet [P6]
Awarded to the top 1% of submissions made to the CHI conference.
- 2024 – 2025 **Special Recognitions for Outstanding Reviews** (5 in total)
Recognition to outstanding reviewers provided highly useful peer reviews.
- 2022 **Oral Recognition** at ACM MM as co-primary author for FeMaSR [P3]
Recognition given to the top 5% of submissions made to the MM conference for oral presentation.
- 2025 – 2027 **David R. Cheriton Graduate Scholarship**, University of Waterloo
Awarded to top PhD students based on academic research excellence. \$20,000 over 2 years.
- 2022 – 2026 **International Doctoral Student Award**, University of Waterloo
Awarded to top international doctoral students based on academic excellence. \$53,000 over 4 years.
- 2021 **Vector Scholarship in AI**, Vector Institute
Awarded to top incoming graduate students for research potential in AI. \$17,500 over 1 year.
- 2021 **Mathematics International Award of Excellence**, University of Waterloo.
Awarded to incoming international graduate students for research potential. \$5,000 over 2 terms.
- 2016 – 2020 **Award for Excellence in Academic Performance**, Xiamen University
Awarded to top undergraduate students based on academic excellence. 5,000 CNY each time.

PAST RESEARCH POSITIONS

- 2021/09 – **University of Waterloo**, Waterloo, ON, Canada
Present Graduate Student Researcher
Advisor: Jian Zhao
Building interactive systems to augment human creativity [P4, P5, P7].
- 2020/12 – **The Chinese University of Hong Kong, Shenzhen**, Shenzhen, China
2021/08 Research Assistant
Advisor: Xiaoguang Han
Proposed an approach based on VQ-GAN for Image Super-Resolution [P3].
- 2019/09 – **Dartmouth College**, Hanover, NH, USA
2020/03 Research Assistant
Advisors: Xia Zhou, Xing-Dong Yang
Leveraged wearable devices & Mixed Reality for Sign-Language teaching [P2].

2017/10 – **Xiamen University**, Xiamen, China
2019/09 Undergraduate Research Assistant
Advisor: Shihui Guo
Exploited wearable devices for VR locomotion with gesture recognition [P1].

ACADEMIC SERVICES

Organizing Committee

2025 – 2026 Paper Chair Assistant, CHI 2026

Program Committee

2025 International Program Committee, GI 2025
2025 Program Committee, Associate Chair, C&C 2025

Conference Reviewer

2024 – 2025 SIGCHI Conference on Human Factors in Computing Systems (CHI)
2024 – 2025 ACM User Interface Software and Technology Symposium (UIST)
2024 – 2025 IEEE Visualization and Visual Analytics Conference (VIS)
2024 – 2025 SIGCHI Late Breaking Work (CHI LBW)
2025 Pacific Conference on Computer Graphics and Applications (Pacific Graphics)
2024 ACM Conference on Designing Interactive Systems (DIS)
2024 Creativity & Cognition (C&C)

🏆 Special Recognitions for Outstanding Reviews (×5):

CHI'24, CHI'25, UIST'25, CHI LBW'25, C&C'25

Conference Session Chair

2025 Paper Session “*Malleable and Adaptive Interface*”, CHI 2025

INVITED TALKS

Interactive Visual Abstractions for Steerable Creativity

2025/11 University of Toronto iSchool Seminar, hosted by Prof. Ebrahim Bagheri.
2025/11 Guest Lecture for CS889 in University of Waterloo, hosted by Prof. Jian Zhao.
2025/11 UCSD Design Lab Seminar

MENTORING

- 2025 – **Connie Cheng**, Master student at Harvard University & MIT.
Project: Specifying temporal change for animated brush.
- 2025 – **Cara Li**, Master student at University of Waterloo.
Project: Fluid in-situ graphics creation through reified sketched annotations.
- 2024 – **Yue Theresa Lyu**, Ph.D. student at University of Waterloo.
Project: video creation and authoring tool.
- 2024 – 2025 **Chun Daisy Ye**, Undergraduate student at University of Waterloo.
Now: Software Engineer at Salesforce.
- 2023 – 2024 **Yinghou Wang**, Master student at Harvard University & MIT, published [P6, P7].
Now: Creative Technologist at Motorola Solutions.
- 2023 **Mingyu Liu**, Undergraduate student at University of Waterloo, published [P5].
Now: Software Engineer at Bloomberg.
- 2022 **Ziqi Zhou**, Master student at University of Waterloo, published [P4].
Now: Partner at Puzzle Ventures.
- 2022 **Julia Zhang**, Undergraduate student at University of Waterloo, published [P4].
Now: Software Engineer at Whatnot.

TEACHING EXPERIENCE

Teaching Assistant in University of Waterloo

- CS246 Object-Oriented Software Development. (Winter 2022, Fall 2023, Winter 2025)
- CS251 Computer Organization and Design. (Spring 2022, Winter 2023)
- CS234 Data Types and Structures. (Fall 2022)
- CS115 Introduction to Computer Science. (Fall 2021)

PRESS COVERAGE

- 2024 *Waterloo News*: Scheming colours faster and easier. [\[Link\]](#)
- 2023 *GraphicSpeak*: University of Waterloo’s Computer Scientists want Graphic Designers to use better Colors. [\[Link\]](#)
- 2023 *TechTimes*: Computer Scientists Develop “De-Stijl” Tool With Adobe to Help People Use Color Better in Graphic Design. [\[Link\]](#)
- 2023 *Waterloo News*: Dreaming in technicolour: Waterloo computer scientists develop a tool to help people use colour better in graphic design. [\[Link\]](#)