

# Chengyuan Xu

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## RESEARCH AREAS

Human-Computer Interaction, Human-AI Collaboration, Interactive Machine Learning, Computer Imaging

## EDUCATION

- 2020– M.S. in Computer Science, University of California, Santa Barbara  
Advisor: [Tobias Höllerer](#)
- 2017– Ph.D. in Media Arts and Technology, University of California, Santa Barbara  
Committee: [Tobias Höllerer](#), [Jennifer Jacobs](#), [Marko Peljhan](#), [Curtis McCully](#)
- 2008–12 B.A. in Journalism, Communication University of China

## PUBLICATIONS

- 2024 **Xu, C.**, Kumaran, R., Stier, N., Yu, K., & Höllerer, T. “AR Collaborative Intelligence for 3D Understanding and Version Control.” *Under review*.
- 2023 Zhu, J., Kumaran, R., **Xu, C.**, & Höllerer, T. “Free-form Conversation with Human and Symbolic Avatars in Mixed Reality.” *IEEE ISMAR 2023*.
- 2023 **Xu, C.**, Lien, K.C., & Höllerer, T. “Comparing Zealous and Restrained AI Recommendations in High-stakes Human-AI Collaboration.” *ACM CHI 2023*.
- 2022 **Xu, C.**, Dong, B., Stier, N., McCully, C., Howell, D. A., Sen, P., & Höllerer, T. “Interactive Segmentation and Visualization for Tiny Objects in Multi-megapixel Images.” *CVPR 2022 demo and proceedings*.
- 2022 **Xu, C.**, McCully, C., Dong, B., Howell, D. A., & Sen, P. “Cosmic-CoNN: A Cosmic Ray Detection Deep Learning Framework, Dataset, and Toolbox.” *240th American Astronomical Society meeting, oral presentation*. *The Astrophysical Journal*, Volume 942, Number 2.
- 2021 Hiramatsu, D. et al., including **Xu, C.** “The electron capture origin of supernova 2018zd.” *Cover story, Nature Astronomy*, Volume 5, Issue 9.

## PROFESSIONAL EXPERIENCE

### 2023      **Research Scientist/Engineer Intern, Adobe**

Jun. 2023 – Sept. 2023

- Improved the eye makeup model in Photoshop Express and released in iOS and Android products.
- Submitted a patent for a future "all-in-one" facial makeup model.

### 2022      **Computer Vision Intern, Appen**

Dec. 2021 – Sept. 2022

- ["Comparing Zealous and Restrained AI Recommendations in High-stakes Human-AI Collaboration."](#) We proposed a human-in-the-loop, AI-assisted video annotation workflow that helped human annotators to track faces 30% faster with better quality.
- We designed a large user study and investigated 3,466 person-hours of annotation work. The analysis revealed significant findings to guide future designs of human-AI collaboration systems in high-stakes tasks.

### 2021      **Computer Vision Researcher, Benioff Ocean Science Laboratory**

Summer Internship

- ["BOI Baltimore Trash Wheel Computer Vision Model and Dataset."](#) We produced a new dataset and a detection model to identify 15 types of ocean-bound river wastes like plastic bottles or bags, foam fragments, and other inorganic wastes in complex trash wheel images.
- The project aims to support more efficient and more accurate data collection for a greater understanding of the types and sources of river waste and to ultimately turn off the tap of plastic and other solid waste pollution into the ocean.

### 2019      **Imaging Intern, Las Cumbres Observatory**

Summer Internship

- ["Cosmic-ConNN: A Cosmic Ray Detection Deep Learning Framework, Dataset, and Toolbox."](#) This work features a large-scale dataset and SOTA models to detect cosmic rays in astronomical imaging data using deep learning. Our proposed novel loss function and network design greatly improve model generality for new observations from telescopes not included in the training data. The open-source dataset, framework, and GUI toolkit make deep-learning models widely accessible by the community of astronomers.

### 2018      **Computer Vision Intern, ByteDance AI Lab**

Summer Internship

- ["Virtual Musical Instruments."](#) A TikTok prototype that allows users to interact with musical instruments and sound interpolation using real-time pose-estimation.

2016–17    Peking University, Part-time Lecturer

2015–16    BBC News, Multimedia Producer

2012–15    CNN International, Video Journalist

## OTHER PROJECTS

- 2018-19 “[Coherent Video Style Transfer](#).” We propose a novel generative adversarial network (GAN) architecture to achieve spatially and temporally coherent video style transfers.
- 2018 [motionLight](#). A playful interactive audio-visual installation inspired by Jim Campbell’s low resolution artwork series.
- 2018 [Top wildlife buyers and sellers in 2016](#). Flocking based interactive data visualization of wildlife trades in 2016.

## SERVICE

- 2024 Reviewer, ACM CHI 2024 Student Research Competition
- 2023 Reviewer, ACM CHI PLAY 2023 Work-In-Progress, PacificVis 2024
- 2022 Reviewer, ACM CHI 2023
- 2021–22 Student Representative, Media Arts and Technology Program, UCSB.
- 2020–21 Peer Mentor, Women In Computer Science, WiCS Mentorship Program, UCSB.

## ACADEMIC EXPERIENCE

- 2023- SIGCHI member, the ACM Special Interest Group on Computer-Human Interaction
- 2021 SDSC Cyberinfrastructure-Enabled Machine Learning Summer Institute
- 2018–23 Graduate Student Researcher, University of California, Santa Barbara

## GRANTS AND AWARDS

- 2018-22 International Doctoral Recruitment Fellowship (\$15,000 Annually).
- 2020 Mellichamp 21st Century Global Dynamics Graduate Research Fellowship (\$7,500).
- 2018 Media Arts and Technology Grant (\$2,500).
- 2018 MAT End of Year Show Grant (\$750).