Cheng-Yao (Eric) Wang

Research Scientist, Global Technology Applied Research, JPMorganChase

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Summary

I am an **AR/VR Research Scientist** in Global Technology Applied Research at **JPMorganChase**, where I design and study XR systems that support human collaboration in complex, real-world settings. My research sits at the intersection of XR, HCI/CSCW, and AI-enabled interaction, focusing on how spatial interfaces enhance shared awareness, coordination, and group work.

I build **AI-augmented XR systems** that integrate spatial interaction with perception, multimodal language models, and agent-based workflows. Rather than treating AI as a standalone assistant, my work examines how AI operates within XR environments to surface relevant context and maintain traceability across collaboration.

My work has been published in **ACM CHI, CSCW, and IEEE ISMAR**. I received a **PhD in Information Science from Cornell University**, following BS/MS degrees in Computer Science.

Research Interests

- **XR systems** for complex work and collaboration in **hybrid and distributed settings**
- **AI-augmented XR collaboration** for **context awareness, decision-making, and traceability**
- **Human–agent collaboration** in immersive environments to **enhance collaborative work experiences**
- **XR + AI system** building and evaluation, spanning **design, implementation, and empirical studies**

Skills

- **XR Platforms:** visionOS / iOS / macOS (ARKit, RealityKit), Meta Quest, WebXR
- **AI Systems:** LLM/VLM integration, multimodal grounding, agent-based workflows
- **Systems:** multi-user and cross-platform XR systems, computer vision, networking, streaming
- **Tools & Programming:** Unity, Unreal, Babylon.js, C#, TypeScript/JavaScript, Swift, Python, C++
- **Research Methods:** mixed-methods research, experimental design, usability evaluation, thematic and statistical analysis

Experience

AR/VR Research Scientist, JPMorganChase – New York, NY, USA   Jan 2023 – present
- AR/VR Research Scientist in Global Technology Applied Research (GTAR XR team).
- Design and build XR + AI systems for hybrid collaboration, sensemaking, and decision support.
- Lead end-to-end research projects from stakeholder framing to deployable prototypes and evaluation.

Research Intern, Microsoft Research – Redmond, WA, USA   June 2022 – Aug 2022
- Worked with Dr. Mar Gonzalez-Franco and Dr. Andy Wilson (EPIC team).
- Conducted research on VR/MR avatars and collaborative interaction techniques.

Research Intern, Meta Reality Labs – Toronto, Canada   Sept 2021 – Feb 2022
- Collaborated with Dr. Mark Parent and Marcello Giordano.
- Developed Remote AR Transformer techniques for interaction across dissimilar physical spaces.

Research Intern, Microsoft Research – Redmond, WA, USA   June 2021 – Aug 2021
- Worked with Dr. Mar Gonzalez-Franco, Dr. Daniel McDuff, and Dr. Eyal Ofek (EPIC team).
- Implemented CityLifeSim, a high-fidelity pedestrian and vehicle simulation system.

Research Intern, Autodesk Research – Toronto, Canada   Jan 2021 – Mar 2021
- Worked with Dr. Fraser Anderson and Dr. Qian Zhou (HCI & VIS group).
- Developed and evaluated VideoPoseVR for avatar animation from online videos.

Education

Cornell University, PhD in Information Science – Ithaca, NY, USA   Sept 2016 – Aug 2023
- Thesis: Sharing Transformed Experiences Across Time and Space through VR/MR and Transformation Design
- Advisor: Prof. Andrea Stevenson Won

National Taiwan University, MS in Computer Science – Taipei, Taiwan   Feb 2012 – Aug 2014
- Advisor: Prof. Mike Y. Chen

National Taiwan University, BS in Computer Science – Taipei, Taiwan   Sept 2008 – Jan 2012

Selected Publications

S-TIER: Situated-Traceable Insights in Extended Reality for Hybrid Crisis Management   Jan 2026

XR and AI framework that transforms conversations and multimodal context into situated, traceable insights to support hybrid and asynchronous crisis response.
Cheng-Yao Wang et al.
(Under review)

HybridPortal: Enabling Hybrid Group Interactions in Hybrid Events   Oct 2025

Mobile portal system bridging physical and virtual event spaces through live AR video and spatial interaction.
Cheng-Yao Wang et al.
(Under review)

MRTransformer: Transforming Avatar Non-verbal Behavior for Remote MR Collaboration in Incongruent Spaces   Oct 2024

Technique for transforming avatar nonverbal behavior to preserve collaboration cues across incongruent mixed reality spaces.
Cheng-Yao Wang, Hyunju Kim, Payod Panda, Eyal Ofek, Mar Gonzalez-Franco, Andrea Stevenson Won
doi.org/10.1109/ISMAR-Adjunct.2024.00000 (ISMAR Adjunct 2024)

Publications

SocialMiXR: Facilitating Hybrid Social Interactions at Conferences   May 2025
Cheng-Yao Wang*, Fannie Liu*, William Moriarty, Feiyu Lu, Usman Mir, David Saffo, Mengyu Chen, Blair MacIntyre
dl.acm.org/doi/10.1145/3711069 (PACM HCI (CSCW 2025))

Growing Together at Work: Cultivating a Mentorship Garden   May 2025
Erica Principe Cruz, Cheng-Yao Wang, William Moriarty, Blair MacIntyre, Fannie Liu
dl.acm.org/doi/10.1145/3710988 (PACM HCI (CSCW 2025))

Adaptive Content Placement in Mixed Reality Through Empirical User Behavioral Patterns   Oct 2024

Feiyu Lu, Mengyu Chen, Hsiang Hsu, Pranav Deshpande, Cheng-Yao Wang, Blair MacIntyre

ieeexplore.ieee.org/document/10765314 (ISMAR Adjunct 2024)

Adaptive 3D UI Placement in Mixed Reality Using Deep Reinforcement Learning   May 2024

Feiyu Lu, Mengyu Chen, Hsiang Hsu, Pranav Deshpande, Cheng-Yao Wang, Blair MacIntyre

dl.acm.org/doi/10.1145/3613905.3651059 (CHI EA 2024)

AvatarPilot: Decoupling One-to-One Motions from Their Semantics with Weighted Interpolations   Oct 2024

Cheng-Yao Wang, Eyal Ofek, Hyunju Kim, Payod Panda, Andrea Stevenson Won, Mar Gonzalez-Franco

ieeexplore.ieee.org/document/10765138 (ISMAR Adjunct 2024)

CollabXR: Bridging Realities in Collaborative Workspaces with Dynamic Plugin and Collaborative Tools Integration   Mar 2024

Cheng-Yao Wang, David Saffo, Bill Moriarty, Blair MacIntyre

ieeexplore.ieee.org/document/10536279 (IEEE VRW 2024)

Embodying Physics-Aware Avatars in Virtual Reality   Apr 2023

Yujie Tao, Cheng-Yao Wang, Andrew D. Wilson, Eyal Ofek, Mar Gonzalez-Franco

dl.acm.org/doi/10.1145/3544548.3580979 (CHI 2023)

VideoPoseVR: Authoring Virtual Reality Character Animations with Online Videos   Nov 2022

Cheng-Yao Wang, Qian Zhou, George Fitzmaurice, Fraser Anderson

dl.acm.org/doi/10.1145/3567728 (PACM HCI (ISS 2022))

CityLifeSim: A High-Fidelity Pedestrian and Vehicle Simulation with Complex Behaviors   Dec 2022

Cheng-Yao Wang, Oron Nir, Sai Vemprala, Ashish Kapoor, Eyal Ofek, Daniel McDuff, Mar Gonzalez-Franco

ieeexplore.ieee.org/document/10070899 (IEEE ICIR 2022)

Shared Realities: Avatar Identification and Privacy Concerns in Reconstructed Experiences   Oct 2021

Cheng-Yao Wang, Sandhya Sriram, Andrea Stevenson Won

dl.acm.org/doi/10.1145/3476078 (PACM HCI (CSCW 2021))

Hide and Seek: Choices of Virtual Backgrounds in Video Chats and Their Effects on Perception   Oct 2021

Angel Hsing-Chi Hwang, Cheng-Yao Wang, Yao-Yuan Yang, Andrea Stevenson Won

dl.acm.org/doi/10.1145/3476044 (PACM HCI (CSCW 2021))

Again, Together: Socially Reliving Virtual Reality Experiences When Separated   Apr 2020

Cheng-Yao Wang, Mose Sakashita, Upol Ehsan, Jingjin Li, Andrea Stevenson Won

dl.acm.org/doi/10.1145/3313831.3376642 (CHI 2020)

ReliveReality: Enabling Socially Reliving Experiences in Virtual Reality via a Single RGB Camera   May 2020

Cheng-Yao Wang, Shengguang Bai, Andrea Stevenson Won

ieeexplore.ieee.org/document/9090534 (IEEE VRW 2020)

Movebox: Democratizing Mocap for the Microsoft Rocketbox Avatar Library Dec 2020

Mar Gonzalez-Franco, Zelia Egan, Matthew Peachey, Angus Antley, Tanmay Randhavane, Payod Panda, Yaying Zhang, Cheng-Yao Wang, Derek F. Reilly, Tabitha C. Peck

ieeexplore.ieee.org/document/9319096 (IEEE AIVR 2020)

Drone.io: A Gestural and Visual Interface for Human-Drone Interaction Mar 2019

Jessica R. Cauchard, Alex Tamkin, Cheng-Yao Wang, Luke Vink, Michelle Park, Tommy Fang, James A. Landay

ieeexplore.ieee.org/document/8673011 (HRI 2019)

RoMA: Interactive Fabrication with Augmented Reality and a Robotic 3D Printer Apr 2018

Huaishu Peng, Jimmy Briggs, Cheng-Yao Wang, Kevin Guo, Joseph Kider, Stefanie Mueller, Patrick Baudisch, François Guimbretière

dl.acm.org/doi/10.1145/3173574.3174153 (CHI 2018)

PalmGesture: Using Palms as Gesture Interfaces for Eyes-Free Input Aug 2015

Cheng-Yao Wang, Min-Chieh Hsiu, Po-Tsung Chiu, Chiao-Hui Chang, Liwei Chan, Bing-Yu Chen, Mike Y. Chen

dl.acm.org/doi/10.1145/2785830.2785885 (MobileHCI 2015)

PalmType: Using Palms as Keyboards for Smart Glasses Aug 2015

Cheng-Yao Wang, Wei-Chen Chu, Po-Tsung Chiu, Min-Chieh Hsiu, Yih-Harn Chiang, Mike Y. Chen

dl.acm.org/doi/10.1145/2785830.2785886 (MobileHCI 2015)

Evertutor: Automatically Creating Interactive Guided Tutorials on Smartphones by User Demonstration Apr 2014

Cheng-Yao Wang, Wei-Chen Chu, Hou-Ren Chen, Chun-Yen Hsu, Mike Y. Chen

dl.acm.org/doi/10.1145/2556288.2557407 (CHI 2014)