

# ZONGZHEN (JACK) YANG

jackyangzzh@gmail.com  
Personal Website | GitHub | LinkedIn

Software engineer specializing in cross-platform XR systems, spatial UI, avatars, and interactive AI experiences. Currently building avatar and social collaboration AI experiences for Microsoft Mesh and Microsoft Teams, with experience across enterprise platforms, AR/VR startups, research labs, and shipped consumer products.

## CORE COMPETENCIES

- Mixed Reality Development
- Human-Computer Interaction Design
- Interactive AI Experiences
- Cross-Platform UI Systems
- Accessibility Design
- Performance Optimization

## TECHNICAL SKILLS

**Languages:** C#, C++, TypeScript, JavaScript, Python, Swift

**XR / Graphics / 3D:** Unity, Unreal, OpenXR, WebXR, visionOS, OpenGL, Vulkan, DirectX, Three.js, Babylon.js, Blender, 3D Math

**AI / Cloud / Tools:** LLMs, Agents, RAG, MCP, A2A, PyTorch, OpenCV, Azure, ROS, React, Git

## PROFESSIONAL EXPERIENCE

### Microsoft

*Software Engineer II, Mixed Reality*

June 2022 – Present  
Redmond, WA

- Driving early-stage AI initiatives integrating multimodal LLMs into spatial collaboration experiences (details under NDA).
- Engineered the shared UI framework powering Microsoft Mesh and Avatars in Teams for millions of users — defined reusable interaction patterns, input abstractions, accessibility integration, and spatial UI components adopted by every Mesh product team.
- Owned the real-time avatar rendering and performance pipeline across HoloLens, Quest, web, and desktop — profiled CPU/GPU frame budgets and applied LOD switching, GPU instancing, and other optimizations to sustain target framerates on constrained hardware.
- Shipped end-to-end avatar customization and character-building systems with data-driven content pipelines, weekly release cadence, and 20+ language localization

### Holos Inc.

*AR/VR Interaction Engineer*

February 2019 – May 2022  
<https://holos.io/>

- Build an interactive, networked AR/VR training simulation system with hand tracking, gesture recognition, and simulated physics for enterprise content management.
- Prototype and ship multiplayer networking, 3D model processing, and virtual object manipulation features—directly contributing to a \$750K U.S. Air Force research contract and TechStars acceptance.
- Drive product iterations based on user testing observations, shaping design decisions and feature roadmap.

### Kats Laboratory of Applied Physics

*AR/VR Researcher*

October 2017 – March 2022  
Madison, WI

- Developed chromatic-adjustment AI algorithms applying computer vision to hyperspectral imagery, reaching 90% accuracy in simulating color-vision deficiencies.
- Built color-calibrated VR simulations on Oculus HMDs that informed design implications for vision-enhancement optical lenses; co-authored arXiv publication on perovskite-nanocrystal frequency conversion.

## PROJECTS

### Project Virtualso

*Founder & Developer (Unity | OpenXR | C++ | C#)*

January 2020 – June 2023  
Madison, WI

- Built a VR interview and presentation simulator with NLP-powered conversational AI agents featuring emotion-driven facial expressions and real-time gesture feedback; validated with business-school students for interview practice.

### PolySpace VR

*Founder & Developer (Unity | Photon Networking | OpenXR)*

September 2020 – August 2021  
[github.com/Poly-Space-VR](https://github.com/Poly-Space-VR)

- Designed and shipped open-source VR social platform on the Meta Quest Store optimized for low-latency cross-device performance: 1,000+ downloads, 350+ active users.

## EDUCATION AND CREDENTIALS

**University of Wisconsin-Madison** | *B.A. in Computer Science & B.A in Communication Arts*

August 2016 – June 2020

- Teaching assistant for CS 559 (Computer Graphics) for 350+ students across 2 semesters

**Carnegie Mellon University** | *National Game Academy*

May 2015 – August 2015