Zongzhen (Jack) Yang

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Innovative and passionate Mixed Reality (XR) developer with 6+ years' experience in building highly immersive and interactive virtual experiences, with a strong background in Human-Computer Interaction design and Social Computing.

TECHNICAL SKILLS

C# | C++ | MATLAB | JavaScript | Unity | Unreal | Leap Motion | OpenVR | OpenGL | MRTK | ARKit | ARCore | Blender | Git

EDUCATION

University of Wisconsin Madison | B.A. in Computer Science & B.A in Communication Arts — August 2016 - June 2020
University of California San Diego | VR Development Professional Certificate — July 2020 - December 2020
University of London | Specialization in Virtual Reality — January 2020 - June 2020

PUBLICATIONS

Z.Yang*, B. Rubio-Perez*, J. Salman, M.Frising, M. A. Kats, "Monte Carlo Simulations of the Farnsworth-Munsell 100 Hue Color Vision Test for Anomalous Trichromatic and Dichromatic Observers", (Forthcoming, Spring 2022)

Z.Yang, B. Rubio-Perez, M. A. Kats, "Breaking Binocular Redundancy Through Virtual Reality", (Forthcoming, Fall 2021)

J. Salman, M. Gangishetty, B. Rubio-Perez, D. Feng, Z. Yu, Z. Yang, C. Wang, A. Shahsafi, D. Congreve, M. A. Kats, "Passive frequency conversion of ultraviolet images into the visible using perovskite nanocrystals", *Journal of Optics,* Vol. 23, No. 5, 054001 (2021)

Featured in: Cameron, Mike, "Effective Leaders: Four Attributes That Underpin The Core Characteristics of Effective Leadership", *SpiritCast Network* (2021)

RESEARCH

Kats Laboratory of Applied Physics — October 2017 - Present

Researcher (Matlab | Unity | Hyperspectral Imaging | Oculus) — *Madison, WI*

- Devise chromatic adjustment algorithms with computer vision techniques on hyperspectral images to simulate color blindness
- Develop artificial intelligence algorithm to replicate human behavior during color vision deficiency tests such as Farnsworth-Munsell 100 Hue Test and D-15 Test to examine the accuracy of chromatic adjustment with 90% confidence
- Program virtual reality simulations to visualize research findings through color-calibrated Oculus Head Mounted Display (HMD), resulting in practical design implications for potential human vision enhancement glasses

University of Wisconsin Computer Graphics Lab — September 2019 - May 2020

Researcher (Unity | ROS (Robot Operating System) | HTC Vive) — *Madison, WI*

- Built a virtual reality system where users can remote control robots with hand and arm gestures by passing ROS data between Unity and robot through network socket with little latency, resulting in a real-time mimicry control system
- Created a motion playback system with intuitive user interface to dynamically replicate virtual robot arm movement by interpolating robotic data from experiments in Unity that was used to analyze 15+ lab experiments

EXPERIENCE

Holos Inc. — February 2019 - Present

AR/VR Developer (Unity | Leap Motion | Blender) — *https://holos.io/*

- Build interactive networked VR and AR content management and training simulation system with hand tracking interaction
- Prototype and deploy key features, including multiplayer networking, hand gesture recognition, model processing, and user onboarding interface, resulting in winning a $750,000 research contract with the U.S. Air Force
- Formulate and implement new design decisions and product directions based on user testing observations

CS559 Computer Graphics — Fall 2019 & Spring 2020

Teaching Assistant (THREE.js | GLSL Shader | Git) — *Madison, WI*

- Provided tutoring and support to 350+ students on course content and assignments for 2 semesters
- Assisted head faculty members with designing classroom materials and graded 550+ student projects