

WENHAO YANG

Assistant Professor, Dr. Victor A. Zaloom Department of Industrial and Systems Engineering, Lamar University
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PROFESSIONAL SUMMARY

Engineering Ph.D. with multidisciplinary research experience in Human-Robot Interaction, Robotics, AR/VR/MR, Game Development, and User Experience Design. Teaching undergraduate and graduate classes in the Industrial and Systems Engineering Department. Results-driven professional with a passion for demystifying complex technologies and empowering others through knowledge. Recognized for persistence, patience, and a methodical approach to learning. Skilled in developing scalable, maintainable solutions for complex project requirements.

PROFESSIONAL EXPERIENCE

- ▶ **Assistant Professor** | [Lamar University](#) · Beaumont, TX 77705, USA **Jul. 2024 – Present**
 - Research Interests: Human-robot Interaction, Robotics manipulation, Programming by Demonstration, Robotics System Design, Augmented & Virtual Reality, Human Factors, Tele-robots, Cobots, Cyber-Physical Systems, Digital Twin, Industry 4.0, Smart Factory.
 - Established an XR² (Extended Reality × Robotics) Lab, supporting 10+ graduate and undergraduate researchers in robotics, AR/VR, and cobotics.
 - Secured \$148,000 in internal funding and initiated 4 interdisciplinary research projects with Engineering and Computer Science.
 - Teaching: [Robotics Operations and Programming \(INEN-5301\)](#), [AR/VR in manufacturing \(INEN-5301\)](#), [Introduction to Robotics \(INEN-5358\)](#), [Professional Seminar \(INEN-6110\)](#).
- ▶ **Software Engineer** | [Meta Reality Labs](#) · Redmond, WA 98052, USA **Jan. 2024 – Mar. 2024**
 - Enhanced Meta Simulators wide-FOV compatibility, validating canting camera functionality on UEVR and Steam VR, testing 30 applications to ensure stability and performance.
 - Developed and optimized VRSDKs for 4+ prototyping HMDs with wide-FOV, varifocal, and high-resolution, reducing integration time by 30%.
 - Showcased wide-FOV practical applications by creating two immersive scenarios in Unreal Engine, achieving 20% higher user engagement in usability testing.
 - Designed a realistic Codec Avatar experience by developing a Unity application featuring multiple avatars for PCVR.
- ▶ **Research Assistant** | [Rochester Institute of Technology](#) · Rochester, NY 14623, USA **Aug. 2019 – May. 2023**
 - Responsible for supporting and assisting Dr. Yunbo Zhang in various research activities and projects.
 - Managed the setup and maintenance of a CDIME robotics research lab with 3 robot manipulators (Aubo, UFactory) and 6+ VR HMDs (Oculus Rift, HTC Vive, Meta Quest 1/2/3/pro).
 - Led development of human-robot collaboration experiments, resulting in 7 conference papers and advancing research in HRI, smart manufacturing, and AR/VR development.
 - Mentored 5 junior graduate/undergraduate students, providing training in robot programming, motion planning, and VR development.
- ▶ **Research Intern** | [OPPO US Research Center \(Innopeak Tech\)](#) · Bellevue, WA 98004, USA **Jun. 2022 – Sep. 2022**
 - Served as the primary developer for an MR-based teleoperation project, delivering an innovative MR teleoperation system with an Automated Guided Vehicle (Rover Pro) within 12 weeks.
 - Implemented the teleoperation system on Microsoft HoloLens 2 with real-time video streaming capabilities.

- Developed a 3D UI/UX design for an intuitive and user-friendly interface, enhancing three control modes.
- Collaborated with cross-disciplinary hardware, CV, and HCI teams to design a multimodal interface improving operator usability by 40%.
- Created and demonstrated a fitness instruction application within the Metaverse, showcasing practical applications.
- Presented MR teleoperation prototypes to senior leadership, shaping internal strategic discussions on XR robotics development.

► **Engineering Intern** | [Guangdong Bright Dream Robotics Co., Ltd.](#) · *Foshan, Guangdong, China* **May. 2019 – Aug. 2019**

- Tile-Laying Robot development project: a construction robot for indoor tile thin-laying.
- Established an autonomous movement system by developing an elevation positioning and movement control system.
- Developed and tested the software of the 6-DOF robot for smooth movement and outstanding mechanical performance.
- Contributed to early-stage development of a commercial tile-laying robot, improving motion accuracy by 15% through elevation control algorithms.
- Collaborated with a team of 6 engineers to design robotic motion paths, enabling smooth multi-axis operations for thin-tile automation.
- Conducted 30+ system tests to validate robot arm dynamics and ensure stable deployment in indoor construction environments.

TEACHING EXPERIENCE

► **Assistant Professor** | [Lamar University](#) · *Beaumont, TX 77705, USA* **Jul. 2024 – Present**

Department of Industrial and Systems Engineering, taking online and face-to-face classes in graduate levels:

- [Robotics Operations and Programming \(INEN-5301\)](#)
- [AR/VR in manufacturing \(INEN-5301\)](#)
- [Introduction to Robotics \(INEN-5358\)](#)
- [Professional Seminar \(INEN-6110\)](#)
- Developed and launched 2 new graduate courses in AR/VR (INEN-5301-01) and Robotics (INEN-5301-05).
- Integrated immersive VR coding and development modules into INEN-5301-01 course, improving student engagement scores by 35% in the 2025 Spring term (27/20) and 30% in the 2026 Spring term (26/20), respectively.

► **Guest Lecturer** | [Monroe Community College](#) · *Rochester, NY 14623, USA* **Aug. 2023 – May. 2024**

Developed a comprehensive course titled "Industrial Robotics and Automation in Manufacturing" for community college students, ensuring that students gain a holistic understanding of the challenges and opportunities presented by Industry 4.0.

- Delivered the lecture in both in-person and online.

► **Teaching Assistant** | [Rochester Institute of Technology](#) · 3D Printing (ISEE-741) · *Rochester, NY 14623, USA* **Aug. 2021 – May. 2022**

Educated graduates in a hands-on lab session on creating a 3D design and printing a functional prototype with 3D printing technologies on various devices and tools, such as Original Prusa, Markforged, and Formlabs.

► **Teaching Assistant** | [Rochester Institute of Technology](#) · Materials Processing (ISEE-140) · *Rochester, NY 14623, USA* **Aug. 2021 – Dec. 2021**

Guided undergraduates on a project with fabrication processes, including cutting, molding, casting, forming, milling, powder metallurgy, solid modeling, and engineering drawing.

EDUCATION

- ▶ **Ph.D., Rochester Institute of Technology** | *U.S.A.* **Aug. 2019 – Dec. 2023**
 - Engineering Ph.D. Program | Supervisor: [Dr. Yunbo Zhang](#)
 - Dissertation: [Enhancing human-robot collaboration through intuitive Augmented Reality interface and precise visualization](#)
- ▶ **M.S., The Hong Kong University of Science and Technology** | *Hong Kong, China* **Aug. 2018 – Jun. 2019**
 - Major: Mechanical Engineering | GPA 4.0/4.0 | Advisor: [Prof. Kai Tang](#)
 - Thesis Project: Robotic engraving of complex models
- ▶ **B.S., Nanjing University of Aeronautics and Astronautics** | *P. R. China* **Sept. 2014 – Jun. 2018**
 - Major: Aircraft Design and Engineering | GPA 3.9/5.0 Rank 35/302
 - Graduation Design: Structure design of micro multi-legged robot based on piezoelectric actuators

PATENTS AND PUBLICATIONS

1. Yiyang Liu, James Liang, Heng Fan, **Wenhao Yang**, Yiming Cui, Xiaotian Han, Lifu Huang, Dongfang Liu, Qifan Wang, and Cheng Han. All you need is one: Capsule prompt tuning with a single vector. *Advances in Neural Information Processing Systems*, 2026.
2. Taowen Wang, Cheng Han, James Liang, **Wenhao Yang**, Dongfang Liu, Luna Xinyu Zhang, Qifan Wang, Jiebo Luo, and Ruixiang Tang. Exploring the adversarial vulnerabilities of vision-language-action models in robotics. In *Proceedings of the IEEE/CVF International Conference on Computer Vision*, pages 6948–6958. 2025.
3. **Wenhao Yang**, Qinqin Xiao, and Yunbo Zhang. HAR²bot: A human-centered augmented reality robot programming method with the awareness of cognitive load. *Journal of Intelligent Manufacturing*, 35(5):1985–2003, 2024.
4. **Wenhao Yang**, Xiwen Dengxiong, Xueting Wang, Yidan Hu, and Yunbo Zhang. “i can see your password”: A case study about cybersecurity risks in mid-air interactions of mixed reality-based smart manufacturing applications. *Journal of Computing and Information Science in Engineering*, 24(3):031004, 2024.
5. **Wenhao Yang** and Yunbo Zhang. A global correction framework for camera registration in video see-through augmented reality systems. *Journal of Computing and Information Science in Engineering*, 24(3):031003, 2024.
6. Chuhua Xian, Jun Zhang, **Wenhao Yang**, and Yunbo Zhang. Multi-scale progressive fusion-based depth image completion and enhancement for industrial collaborative robot applications. *Journal of intelligent manufacturing*, 35(5):2119–2135, 2024.
7. **Wenhao Yang**, Shi Bai, and Yunbo Zhang. RADAR: Robotics Assembly by Demonstration via Augmented Reality. In *2024 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, pages 7063–7070. IEEE, 2024.
8. **Wenhao Yang** and Yunbo Zhang. Visualization error analysis for augmented reality stereo video see-through head-mounted displays in industry 4.0 applications. In *International Manufacturing Science and Engineering Conference*, pages V002T06A016. American Society of Mechanical Engineers, 2022.
9. **Wenhao Yang**, Qinqin Xiao, and Yunbo Zhang. An augmented-reality based human-robot interface for robotics programming in the complex environment. In *International Manufacturing Science and Engineering Conference*, pages V002T07A003. American Society of Mechanical Engineers, 2021.

GRANTS

1. Yang, W., Robots vs Invasive Aquatic Species, \$30,000, Texas Hazardous Waste Research Center (THWRC), 12/2025 – 08/2027.
2. Yang, W., Li, Y., Lin, C., Singh, M., Enhancing Disaster Response Preparedness: Advanced Mixed Reality (MR) Simulations for First Responder Training in Hurricane Scenarios, \$50,000, Center for Resilience, 9/2024 – 8/2025.
3. Qian, Q., Zhang, J., Selvaratnam, T., Liu, X, Yang, W., Brake, N., Collaborative Flooding and Water Quality Monitoring with AI Technology to Transform Environmental Resilience in Southeast Texas, \$50,000, Center for Resilience,

9/2024 – 8/2025.

4. Henry, J., Yang, W., Continuation: Utilizing Augmented Reality (AR) and Standard Alarm Management Practices to Provide Real-Time Information to Refinery Workers in High-Stress Dangerous Environments, \$18,000, Springboard Project, 9/2024 – 8/2025.

EDITORIAL AND REVIEW ACTIVITIES

Conference Reviewer

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|---|------------------------|
| – ASME Manufacturing Science and Engineering Conference (MSEC) | 2021, 2022, 2023, 2024 |
| – ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC-CIE) | 2023, 2024, 2025, 2026 |
| – ACM International Conference of Human-Computer Interaction (CHI) | 2024 |
| – IEEE Conference on Robot and Human Interactive Communication (RO-MAN) | 2024 |
| – American Society for Engineering Education (ASEE) Annual Conference | 2025 |
| – International Conference on Extended Reality (ICXR) | 2025 |

Journal Reviewer

- ASME Journal of Computing and Information Science in Engineering (JCISE)
- Journal of Intelligent Manufacturing
- ASTM Smart and Sustainable Manufacturing Systems
- Robotics and Computer-Integrated Manufacturing (RCIM)
- International Journal of Human-Computer Interaction

COMMITTEE MEMBERSHIPS

Technical Committee

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|---|----------------|
| – Secretary, ASME Computers and Information in Engineering (CIE) Virtual Environments Systems (VES) | 2025 – Present |
| – Member-at-Large, ASME Computers and Information in Engineering (CIE) Virtual Environments Systems (VES) | 2023 – 2025 |

CONFERENCE LEADERSHIP & SERVICE

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| – Chair , Lamar Spring EXPO 2025 Science & Engineering Session, Lamar University, Beaumont, TX | 2025 |
| – Judge , Lamar Spring EXPO 2025 Science & Engineering Session, Lamar University, Beaumont, TX | 2025 |

CONFERENCE PRESENTATIONS

Invited Presentations

- **Wenhao Yang** (March 2026). *Humanoids + AI: Ready for Real Collaboration, or Still Hype?*. ISA Southsat Texas Section Meeting.
- **Wenhao Yang** (February 2026). *Human-Robot Interaction, Collaboration, and VLA Models*. ISA Southsat Texas Section Cybersecurity, AI & Automation (CAA) Symposium.
- **Wenhao Yang** (October 2025). *AI in Human Integrated Process Automation: Balancing Efficiency, Safety, and Cybersecurity*. Process Solutions Summit and VectoberFest.

Conference Papers / Oral Presentations

- **Wenhao Yang** (2025). *Advanced MR Simulations for First Responder Training*. ASME International Design Engineering Technical Conferences and Computers and Information in Engineering Conference (IDETC/CIE).
- **Wenhao Yang**, Shi Bai, and Yunbo Zhang (2024). *RADAR: Robotics Assembly by Demonstration via Augmented Reality*. IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS).

- **Wenhao Yang** and Yunbo Zhang (2024). *A Global Correction Framework for Camera Registration in Video See-Through Augmented Reality Systems*. ASME International Design Engineering Technical Conferences and Computers and Information in Engineering Conference (IDETC/CIE).
- **Wenhao Yang**, Xiwen Dengxiong, Xueting Wang, Yidan Hu, and Yunbo Zhang (2024). *Cybersecurity Risks in Mid-Air Interactions of Mixed Reality-Based Smart Manufacturing Applications*. ASME International Design Engineering Technical Conferences and Computers and Information in Engineering Conference (IDETC/CIE).
- **Wenhao Yang**, Qinqin Xiao, and Yunbo Zhang (2023). *AR-Based Human-Robot Collaboration with Cognitive Load Awareness*. ASME International Manufacturing Science and Engineering Conference (MSEC).
- **Wenhao Yang** and Yunbo Zhang (2022). *Visualization Error Analysis for Augmented Reality Stereo Video See-Through Head-Mounted Displays in Industry 4.0 Applications*. ASME International Manufacturing Science and Engineering Conference (MSEC).
- **Wenhao Yang**, Qinqin Xiao, and Yunbo Zhang (2021). *An Augmented-Reality Based Human-Robot Interface for Robotics Programming in the Complex Environment*. ASME International Manufacturing Science and Engineering Conference (MSEC).

STUDENT GUIDANCE

Doctoral Dissertation Advisor

- **Lakshmana Ayyalasomayajula (Avinash)** – Doctoral of Industrial Engineering, Lamar University 2025 – now
- **Rezwanul Ashraf Ruddro** – Doctoral of Industrial Engineering, Lamar University 2026 – now

Master Thesis Advisor

- **Muhammad Ilyas Mubarik** – M.S., Lamar University 2024 – 2026
- **Rezwanul Ashraf Ruddro** – M.S., Lamar University 2025 – 2026

Doctoral Dissertation Committee

- **Denise Zepeda** – PhD in Chemical Engineering, Lamar University 2024 – now
- **Ka Hin Kevin Lee** – Doctoral of Industrial Engineering, Lamar University 2024 – now
- **Oyedele J Adewol** – Doctoral of Industrial Engineering, Lamar University 2024 – now

HONORS AND AWARDS

- JCISE 2023 Best Reviewer Award, 2024
- NAMRC 49 / MSEC 2021 NSF Student Support Award, MSEC, 2021
- Excellent Student Scholarship, HKUST, 2018
- Outstanding Graduate in NUAA, 2019
- Straight-A Student, NUAA, 2014-2015, 2015-2016, 2016-2017 & 2017-2018
- Award of Pacemaker to Merit Student (only one in each major), NUAA, 2014-2015
- A-Level Scholarship (only top 5% of students), NUAA, 2014-2015, 2015-2016 & 2017-2018
- National Encouragement Scholarship, Ministry of Education, 2025
- First Prize of SANHE CUP National Network Contest for Helicopter, 2016

CERTIFICATIONS

- ASME (The American Society of Mechanical Engineers) Outstanding Reviewer, 2023

PROFESSIONAL MEMBERSHIPS

- Member, Institute of Electrical and Electronics Engineers (IEEE), since 2025
- Member, American Society for Engineering Education (ASEE), since 2024
- Member, The American Society of Mechanical Engineers (ASME), since 2020
- Member, IEEE Robotics and Automation Society, since 2020