

Wenhao Yang

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Assistant Professor, Department of Industrial and Systems Engineering, Lamar University Cherry Building, Room 1608, Beaumont, TX 77705 | +1-409-880-1981 | wenhao.yang@lamar.edu | wenhaoyang.com

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:

- 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 Innovation / Curriculum Development:

- Teaching: Robotics Operations and Programming (INEN-5301-05), AR/VR in manufacturing (INEN-5301-01), 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.

► Software Engineer | Meta Reality Labs | Redmond, WA 98052, USA | Jan. 2024 – May. 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.
- Coordinated cross-functional testing with 4 engineering teams, ensuring consistent SDK integration across prototype HMD platforms.
- Delivered internal demos adopted by 3 RL research groups, showcasing wide-FOV capabilities for next-generation mixed reality devices.

► 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 humanrobot collaboration experiments, resulting in 7 conference papers and advancing research in HRI (Human-robot Interaction), 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

Research of Mixed Reality robot remote control system project

- 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 the practical applications.
 - Presented MR teleoperation prototypes to senior leadership, shaping internal strategic discussions on XR robotics development.
- **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 tilelaying 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 thintile 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).
- **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** | *Rochester, NY 14623, USA* | **Aug. 2021 – May 2022**
- **3D Printing (ISEE-741)** Taught graduate students in hands-on lab sessions, guiding them through 3D design creation and functional prototype printing using equipment such as Original Prusa, Markforged, and Formlabs.
- **Teaching Assistant** | **Rochester Institute of Technology** | *Rochester, NY 14623, USA* | **Aug. 2021 – Dec. 2021**
- **Materials Processing (ISEE-140)** Directed undergraduate project work covering key fabrication processes: 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* [[doi](#)]
- **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 C 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. *arXiv preprint arXiv:2510.16670*, 2025 [\[doi\]](#)
International; Peer-reviewed
- [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 [\[doi\]](#)
International; Peer-reviewed
- [3] **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 [\[doi\]](#)
International; Peer-reviewed
- [4] **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 [\[doi\]](#)
International; Peer-reviewed
- [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 [\[doi\]](#)
International; Peer-reviewed
- [6] **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 [\[doi\]](#)
International; Peer-reviewed
- [7] 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*, pages 1–17, 2024 [\[doi\]](#)
International; Peer-reviewed
- [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*, volume 85819, page V002T06A016. American Society of Mechanical Engineers, 2022 [\[doi\]](#)
International; Peer-reviewed
- [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*, volume 85079, page V002T07A003. American Society of Mechanical Engineers, 2021 [\[doi\]](#)
International; Peer-reviewed

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

► Reviewer of Journals

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| 2025 | ASTM Smart and Sustainable Manufacturing Systems |
| 2025 | Robotics and Computer-Integrated Manufacturing (RCIM) |
| 2025 | International Journal of Human-Computer Interaction |
| 2023 – Present | ASME Journal of Computing and Information Science in Engineering (JCISE) |
| 2023 – Present | Journal of Intelligent Manufacturing |
| 2023 – Present | Journal of Robotics and Computer-Integrated Manufacturing |

► Reviewer of peer-reviewed conferences

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

COMMITTEE MEMBERSHIPS

► Technical Committee

- 2025 – Secretary, ASME Computers and Information in Engineering (CIE) Virtual environments systems (VES)
- 2023 – 2025 Member-at-Large, ASME Computers and Information in Engineering (CIE) Virtual environments systems (VES)

CONFERENCE LEADERSHIP & SERVICE

- 2025 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

CONFERENCE PRESENTATIONS

► Invited Presentations

- **Yang, W.** (2025, October). AI in Human Integrated Process Automation: Balancing Efficiency, Safety, and Cybersecurity. Vector CAGs Process Solutions Summit & VectoberFest, Houston, TX, USA.
- **Yang, W.** (2025, October). Current Research & Application Trends in Robotics. INEN-6110 Professional Seminar, Beaumont, TX, USA.

► Conference Papers / Oral Presentations

- **Yang, W.** (2025, August). Advanced Mixed Reality Simulations for First Responder Training in Hurricane Scenarios. ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC-CIE 2025), Anaheim, CA, USA.
- **Yang, W.**, Dengxiong, X., Wang, X., Hu, Y. and Zhang, Y., (2024, August). I can see your password: A case study about cybersecurity risks in mid-air interactions of mixed reality-based smart manufacturing applications. International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC-CIE) 2023, Boston, MA, USA.
- **Yang, W.** and Zhang, Y., (2024, August). A Global Correction Framework for Camera Registration in Video See-Through Augmented Reality Systems. International Design Engineering Technical Conferences & Computers and Information in Engineering Conference (IDETC-CIE) 2023, Boston, MA, USA.
- **Yang, W.** and Zhang, Y., (2022, June). 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, West Lafayette, IN, USA.
- **Yang, W.**, Xiao, Q. and Zhang, Y., (2021, June). An augmented-reality based human-robot interface for robotics programming in the complex environment. ASME International Manufacturing Science and Engineering Conference, Virtual Conference.

► Poster Presentations

- Wang, T., Han, C., Liang, J., **Yang, W.**, Liu, D., Zhang, L.X., Wang, Q., Luo, J. and Tang, R., (2025, October). Exploring the adversarial vulnerabilities of vision-language-action models in robotics. IEEE/CVF International Conference on Computer Vision, Honolulu, HI, USA.
- Ma, A. & **Yang, W.** (2025, April). MOTION - An Immersive Augmented Reality Platform Integrating Biomechanical Feedback for Chronic Musculoskeletal Rehabilitation. Lamar EXPO 2025, Beaumont, TX, USA.
- **Yang, W.**, Bai, S. and Zhang, Y., (2024, October). RADAR: Robotics Assembly by Demonstration via Augmented Reality. In 2024 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS), ADNEC, Abu Dhabi, UAE.

► Panels / Special Sessions / Demonstrations / Workshops

- **Yang, W., Liu, R., and Zhang, Y.** (2022, April). Industrial applications of Advanced Augmented Reality Technology- Case Study of Computer Repair. Imagine RIT, Rochester, NY, USA.

STUDENT GUIDANCE

▶ Doctoral Dissertation Advisor

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|----------------------------|------------------------------------|------------------|------------|
| - Saleh Mohammad Mobin | Doctoral of Industrial Engineering | Lamar University | 2024 – now |
| - Avinash Ayyalasomayajula | Doctoral of Industrial Engineering | Lamar University | 2025 – now |

▶ Master Thesis Advisor

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|--------------------------|----------------------------------|------------------|------------|
| - Muhammad Ilyas Mubarik | Master of Industrial Engineering | Lamar University | 2024 – now |
| - Aliyu Muraina | Master of Industrial Engineering | Lamar University | 2025 – now |
| - Md Imran Hossain | Master of Industrial Engineering | Lamar University | 2025 – now |

▶ Doctoral Dissertation Committee

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|--------------------|------------------------------------|------------------|------------|
| - 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

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|---|---|---|
| ▶ JCISE 2023 Best Reviewer Award | Journal of Computing and Information Science in Engineering (JCISE) | 2024 |
| ▶ NAMRC 49 / MSEC 2021 NSF Student Support Award | | MSEC 2021 |
| ▶ Excellent Student Scholarship | | HKUST 2019 |
| ▶ Outstanding Graduate in NUAA | | NUAA 2018 |
| ▶ 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

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| ▶ ASME (The American Society of Mechanical Engineers) Outstanding Reviewer | 2023 |
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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)

- Last updated on June 11, 2026 -