

HONG WANG

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RESEARCH INTERESTS

- Area: AI, Augmented Reality (AR), Computer Vision (CV), Large Language Models (LLMs)

EDUCATION

8/2023 - Present	University Of South Florida Ph.D. in Computer Science Advisor: Prof. Zhao Han	Tampa, FL, USA
2/2021 - 12/2022	Stony Brook University M.S. in Computer Science	Stony Brook, NY, USA
9/2016 - 6/2020	Hohai University B.S. in Information and Computing Science	Nanjing, Jiangsu, China

WORKING EXPERIENCE

8/2023 - Present	Research Assistant	Reality, Autonomy, and Robot Experience (RARE) Lab	<ul style="list-style-type: none">• Work on interactive robot systems involving LLMs, AR interfaces, and projector-camera perception.• Designed and evaluated AR indicators for robot field-of-view communication.• Continually contributed to user studies and paper writing.• Developed real-time robot behavior pipelines integrating speech, gestures, and tablet UI for Misty robot.• Mentored undergraduate researchers, supporting project planning, experiment design, and problem-solving.
6/2024 - 8/2024	Voice AI Summer School Researcher	University of South Florida	<ul style="list-style-type: none">• Trained a CNN model using MFCC features, achieving 80.85% accuracy on labeled data.• Improved model performance by 26.4% (from 65.1% to 91.5%) via data augmentation and pre-trained models (ResNet50, EfficientNet B0).
1/2023 - 6/2023	Software Developer	Best High Technologies, Princeton, NJ, USA	<ul style="list-style-type: none">• Developed Java-based web applications using Spring, Hibernate, and MySQL, including multi-table database schemas and REST APIs for data integration.• Participated in Agile development with responsibilities in code reviews, testing, and documentation.

PUBLICATIONS

- **Hong Wang**, Ngoc Bao Dinh, and Zhao Han. "Evaluating Dynamic Surface Compensation for Robots with Projected AR," *HRI 2026 Late-Breaking Reports*
- **Hong Wang**, Ridhima Phatak, James Ocampo, and Zhao Han. "Indicating Robot Vision Capabilities with Augmented Reality," *International Journal of Social Robotics*.
- **Hong Wang**, Zhao Han. "Towards Robot Persuasiveness Self-Assessment for LLM-Powered Recipe Recommender Robot," *Under review by RSS*
- Xiangfei Kong, Rex Gonzalez, Nicolas Echeverria, **Hong Wang et al.** "Bloom Preview: A Low-Cost LLM-Powered Social Robot" *HRI 2026 Interactivity*
- **Hong Wang**, Maria Julia Vidal, and Zhao Han. "Exploring Familiar Design Strategies to Explain Robot Vision Capabilities," *Explainability for Human-Robot Collaboration: Real-World Concerns Workshop (X-HRI) at HRI 2025, 2025*
- Adrian Lozada, Uthman Tijani, Villa Keth, **Hong Wang**, and Zhao Han. "Anywhere Projected AR for Robot Communication: A Mid-Air Fog Screen-Robot System," *2025 ACM/IEEE International Conference on Human-Robot Interaction (HRI), 2025*.
- **Hong Wang**, Tam Do, and Zhao Han. "To Understand Indicators of Robots' Vision Capabilities," *VAM-HRI 2024 - 2024 International Workshop on Virtual, Augmented, and Mixed-Reality for Human-Robot Interactions at HRI 2024, 2024*
- **Hong Wang**, Tam Do, and Zhao Han. "Designing Indicators to Show a Robot's Physical Vision Capability," *IEEE VR 2024 Poster - The 31st IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (IEEE VR), 2024*
- Uthman Tijani, **Hong Wang**, and Zhao Han. "Towards Reproducible Language-Based HRI Experiments: Open-Sourcing a Generalized Experiment Project," *2024 ACM/IEEE International Conference on Human-Robot Interaction (HRI), 2024*.

SELECTED APPLIED PROJECTS

2025 - Present	LLM-Powered Persuasive Social Robot for Healthy Meal Decisions (Misty)	<ul style="list-style-type: none">• Developed an LLM-powered Misty robot system for healthy recipe recommendation with synchronized spoken dialogue and tablet-based multimodal interaction.• Designed and evaluated five persuasive strategies across five LLMs, generating 2,500 single-turn recommendations and 1,000 multi-turn persuasive dialogues.• Built a real-time multimodal interaction pipeline coordinating speech, facial expressions, gestures, LED indicators, and tablet UI on the Misty robot.• Developed an automated evaluation framework to compare persuasion effectiveness across multiple LLMs (GPT-4o, Claude, Gemini, LLaMA, DeepSeek), enabling rapid iteration and design comparison.
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- 2024 – Present **Projected Augmented Reality Display System for Mobile Robots (Fetch, Unitree Go2)**
- Built an end-to-end **projected AR communication system** enabling mobile robots to convey spatial information through mid-air visual displays.
 - Integrated custom hardware and software components, including **ROS-based control, Arduino-driven actuation**, and real-time synchronization with robot navigation.
 - Iteratively refined system design through rapid experimentation, achieving a **60% increase in effective display area** and improved deployment robustness.
- 2023 – 2024 **Mixed Reality Interfaces for Human–Robot Collaboration (Pepper, HoloLens 2)**
- Designed and implemented **AR visualization interfaces in Unity/C#** to communicate robot field-of-view and perceptual capabilities to human collaborators.
 - Prototyped **multiple interface paradigms** (egocentric and allocentric) and evaluated their impact on user understanding, confidence, and cognitive load.
 - Conducted a controlled user study (**N=41**) with Bayesian statistical analysis, translating findings into **actionable design guidelines** for transparent human–robot interaction.

PROFESSIONAL SERVICE

- **Reviewer**
 - IEEE International Conference on Robotics and Automation (ICRA) 2026.
 - Human-Robot Interaction (HRI) Conference 2025, 2026.
 - Transactions on Human-Robot Interaction (THRI) 2025.
 - IEEE RO-MAN Conference 2024.
- **Student Volunteer of IEEE VR 2024 Conference**
- **Student Volunteer of Human-Robot Interaction 2024 Conference**

PROFESSIONAL DEVELOPMENT

- **UR2PhD Graduate Student Mentor Training** | Computing Research Association | 01/2025 – 04/2025
- **2024 CRA-WP Grad Cohort Workshop for Women** | Computing Research Association | 4/2024
- **Staff Member, USF Human-Centered AI and Robotics Consortium (HARC)** | University of South Florida | 2024–Present
- **Bridge2AI Voice Scholar** | Bridge2AI Voice Consortium | 2024

HONORS AND GRANTS

- **Winner of USF Voice AI Summer School Hackathon** | Bridge2AI Voice | 08/2024
- **USF Engineering Alumni Society Conference Grant** | \$500 | 05/2024, 03/2025
- **NSF I-Corps Site subgrant** | Entrepreneur Lead | \$3,000 | 1/2024–3/2024

LEADERSHIP & MENTORING

- 2023 – Present **Teaching Assistant & Research Mentor** **University of South Florida**
- TA:** COP 4931 Robotics Process Automation, CIS 6930 Augmented Reality, CEN 4020 Software Engineering, COP 4710 Database Design
- Mentoring:** Supervised over 30 undergraduate researchers in Python, Unity/MRTK, HoloLens 2 development, and user study design for HRI projects

OUTREACH AND ENGAGEMENT

- 10/05/2024 **DevFest 2024** **University of South Florida**
- Presented a live demo of the Pepper robot and HoloLens 2 to over 30 attendees including students and industry professionals from tech companies.
- 03/01/2024 **USF Innovation Fest** **University of South Florida**
- Showcased research on indicating a robot's vision capability with a Pepper robot and HoloLens 2, engaging over 20 undergraduate and graduate students.

TECHNICAL SKILLS

Programming: Python, C++, C#, Java, JavaScript (React), SQL, R
Machine Learning & NLP: Deep Learning, PyTorch, Hugging Face Transformers, TensorFlow, BERTopic
Cloud & Systems: Docker, Google Cloud, AWS, Azure
Robotics Frameworks: ROS (ROS1/ROS2)
AR/VR Development: Unity, Vuforia, MRTK

Simulation Tools: Rviz, Webots, Gazebo
3D & Graphics: Blender
Data & Visualization: Pandas, NumPy, Matplotlib, D3.js, Tableau
Collaboration & Tools: Git, VS Code, Overleaf, Google Colab
Languages: English (fluent), Mandarin (native)