# Yongzhe(Kindred) Yi

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## Education

BS in Computer Science (Honor) | **University of Wisconsin-Madison** | Expected May 2026

**GPA: 3.86/4**

## Research Interest

My research sits at the intersection of **Human-Robot Interaction (HRI)** and **Robot Learning**. I am driven to design **intelligent robotic systems** that can effectively **learn from their interactions with humans**. My current work explores how recognizing human intent can facilitate complex bimanual dexterous manipulation.

## Project Experience

### NSF HAND Engineering Research Center (ERC)

Mentor: Prof. Bilge Mutlu | **University of Wisconsin–Madison** | Jan 2025 – Present

- Built a **VR-based teleoperation system** for dual Franka arms and Tesollo hands, implementing **custom IK solvers** and real-time retargeting to map human hand motions to dexterous grippers. Demo Link
- **Designed an RNN-based shared autonomy module** to recognize bimanual coordination modes in real-time, dynamically adapting impedance control parameters to enhance manipulation stability and support high-quality data collection for imitation learning.
- Co-developed an LLM-based interface in an exploratory setting to map natural language commands to predefined manipulation primitives, with basic vision-language grounding using RGB-D perception.

### Robotic Grasping Experiments with Franka Emika Panda

Mentor: Prof. Bilge Mutlu | **University of Wisconsin–Madison** | Sep 2024 – Jan 2025

Conducted robotic grasping experiments using franka_ros, libfranka, and Relaxed IK in a ROS1 environment. Evaluated grasping accuracy on the NIST Benchmark by integrating and testing predefined motion planning and inverse kinematics solutions.

**EEG Signal Analysis**

Mentor: Prof. Zheng Yang | **Sichuan University** | Jan 2024 – June 2024

Processed EEG datasets using MATLAB/EEGLAB, extracting event markers, sampling parameters, and multichannel neural signals. Developed automated scripts for channel-wise data decomposition of a 64-channel EEG dataset to support downstream feature analysis.

## Industry Experience

**MiiVii Dynamics, Software Testing Engineer Intern** | Beijing, China | Jun 2023 – Sep 2023

Proficient in Unix command line operations and automated testing, with experience in writing test scripts using Robot Framework to replace repetitive manual testing. Skilled in performing functional and serial port testing to ensure stable module communication, while leveraging Git for version control and collaboration.

## Skills

- **Programming & Frameworks**: Python, C++, ROS/ROS2, NumPy, Docker, OpenCV
- **Machine Learning**: PyTorch, Open3D, Imitation learning, Computer vision (pose estimation, point cloud manipulation)
- **Robotics**: Robot kinematics, Motion planning (OMPL, MoveIt), Control algorithms, Multi-arm and dexterous hand teleoperation
- **XR Integration**: VR/AR interfaces for robotics (Meta Quest 3)
- **Tools & Systems**: Git, Linux, Docker, Simulation environments (Gazebo, PyBullet), Data processing/visualization (Open3D)