Kindred(Yongzhe) Yi

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Education

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

GPA: 3.86/4

Research Interest

I am passionate about robotics, especially human-robot interaction and machine learning. My current research focuses on developing bimanual and multi-finger teleoperation systems that integrate virtual reality with advanced robot control, aiming to bridge human dexterity and robotic autonomy through shared control and machine learning.

Project Experience

HAND ERC Project – Mapping dexterous actions to interface elements

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

Developed a robust VR-based teleoperation pipeline for multi–Franka Panda arms with dexterous hands, enabling real-time and precise mapping of human hand motions to robotic arms and multi-finger grippers. Used shared control-based methods to enhance bimanual teleoperation and imitation learning.

Robotic Grasping Experiments with Franka Emika Panda

Mentor: Prof. Bilge Mutlu | **University of Wisconsin–Madison** | Sep 2024 – Apr 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. Rong Yin | **Sichuan University** | Sep 2023 – Jan 2024

Contributed to a research project on EEG signal analysis, utilizing EEGLAB software to preprocess EEG signals, extract essential features, and transform them into abstract models.

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)