Binglin (Andre) Wang

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Education

New York University May 2026 – May 2027 (expected)
M.S. in Scientific Computing (Joint 5-year BA/MS) GPA: 4.00/4.00
Generalizable Robotics and AI Lab (GRAIL)
Advisor: Lerrel Pinto. Research interests: tactile sensing and dexterous manipulation.

New York University Jan. 2023 – May 2026
B.A. in Mathematics and Computer Science GPA: 3.91/4.00
Honors: Phi Beta Kappa; magna cum laude
Relevant Coursework: Numerical Methods, Theory of ML, Deep Learning, Computer Vision

Research Experience

Generalizable Robotics and AI Lab (GRAIL), New York University Apr. 2025 – Present
Researcher *New York, NY*

PanoTac: A Dense Three-Axis Tactile Sensor for Robust Touch-Centric Manipulation *Jan. 2026 – Oct. 2026*

- Led development of PanoTac sensor, combining piezoresistive and magnetic sensing in a compact, compliant fingertip.
- Designed and fabricated the sensor; built a multimodal manipulation system for teleoperation with real-time tactile visualization and sonified contact feedback; conducted ablation analyses to quantify modality-wise policy reliance.
- Investigated visuo-tactile fusion strategies and trained imitation learning policies; designed and evaluated contact-rich manipulation tasks, improving overall task success from 45.0% (vision only) to **91.7%** with the PanoTac policy.

Human-Pose-Guided Functional Pre-Grasp Manipulation *Sep. 2026 – Present*

- Developing a sim-to-real RL framework with human hand priors for pre-grasp manipulation that enables functional grasping.
- Contributed to sim-to-real transfer of a single-object policy to a WUJI Hand 2 for functional object pickup; building an Aria Gen 2 glasses pipeline for policy inference and grasp data collection.

eFlesh-Based Visuo-Tactile Systems for UMI-Style Grippers and Allegro Hands *Jun. 2025 – Nov. 2025*

- Developed an eFlesh-integrated UMI-style gripper through iterative sensor-gripper co-design; trained visuo-tactile imitation learning policies and evaluated their performance on manipulation tasks.
- Designed and fabricated compact eFlesh fingertips for the Allegro Hand, iterating magnetic configurations and mechanical designs to address sensor miniaturization and inter-finger magnetic interference; the final version was sent to Honda Research.

Publications

PanoTac: A Dense Three-Axis Tactile Sensor for Robust Touch-Centric Manipulation.
B. Wang[*], X. Jiang[*], Z. Teng, X. Liu, Y. Li, L. Pinto, Z. J. Cui, B. Huang. *Under review, ICRA 2027*. [website]

Skills

Training and deploying robot policies for dexterous manipulation (PyTorch, Hydra, ZeroMQ)
Tactile sensor design, fabrication, and integration for robot learning (Onshape CAD, C/C++, Arduino)
Building robot teleoperation and data collection systems (ZeroMQ, OpenCV, NumPy, Onshape CAD)
Data collection for robot learning (UMI, Franka teleoperation, Aria glasses)
General machine learning workflows (PyTorch, scikit-learn, Hydra, W&B, Git, Linux)
Academic writing & typesetting (LaTeX, Microsoft Office)

Languages

English (Bilingual), Chinese (Native)