Bohan Yang

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RESEARCH INTERESTS

My research focuses on **adaptive robot learning after deployment**: developing methods that allow robots to recover from long-tail failures and improve through human intervention, self-feedback, and interaction while maintaining safety and reliability. My past work in assistive robotics spans **workload-aware failure recovery**, **user agency**, and **long-term preference learning**.

EDUCATION

University of Wisconsin–Madison **Expected starting Fall 2026**
Incoming Ph.D. Student in Computer Science Madison, WI
- Research focus: Adaptive robot learning after deployment, human-in-the-loop learning, and robot teaming.

Cornell University **2022 — 2026**
B.S. in Computer Science with Honors Ithaca, NY

PUBLICATIONS

* = *equal contribution*, † = *advisor*

- R. Banerjee, K. Palempalli*, **B. Yang***, J. Fang, A. Abdullah, T. Silver, S. Dean†, T. Bhattacharjee†, "A Human-in-the-Loop Confidence-Aware Failure Recovery Framework for Modular Robot Policies"
  HRI 2026

- J. Fang, J. Yang, Z. Wu, **B. Yang**, T. Bhattacharjee†, "Beyond Failure Recovery: An Engagement-Aware Human-in-the-Loop Framework for Robotic Systems"
  RSS 2026

- W. Gu, **B. Yang**, R. Chang, "Machine Learning-Based Electroencephalogram (EEG) Applications and Its Marketing"
  J. Neurology & Neuroscience, 2022

- W. Gu, R. Chang, **B. Yang**, "EEG Machine Learning for Analysis of Mild Traumatic Brain Injury: A Survey"
  arXiv, 2022

RESEARCH EXPERIENCE

Cornell University EmPRISE Lab **Jun 2024 — Present**
Undergraduate Researcher *Advisor: Prof. Tapomayukh Bhattacharjee*

- Designed a human-in-the-loop failure recovery framework for modular robotic policies that separate module selection and querying decisions, balancing calibrated model uncertainty with human workload estimation. [1]

- Designed and conducted real-robot user studies with participants with (N=2) and without mobility limitations (N=20), evaluating workload-aware recovery policies and engagement-aware autonomy strategies. [1,2]

- Developed model-specific uncertainty quantification strategies for foundation models (VLMs, VLAs, open-vocabulary detectors) to mitigate catastrophic overconfidence in real-world failure modes. [1]

- Built and maintained a modular robotic-bite-acquisition system integrating GPT-4o, GroundingDINO, and RT-1 on a 6-DoF Kinova arm for assistive feeding.

- Fine-tuned RT-1 Vision-Language-Action (VLA) models on real-world robot manipulation data to improve low-level action execution for bite acquisition.

- Designed a memory-augmented preference prediction system for assistive feeding that learns and adapts to individual user preferences across month-scale deployments.

Data-to-Decision **Sep 2021 — Apr 2023**
Research Assistant *Advisor: Prof. Weiqing Gu*

- Conducted a systematic review of EEG-based machine learning pipelines for mild traumatic brain injury (mTBI) diagnosis. [4,5]

- Benchmarked signal preprocessing techniques (FFT, wavelets) and classifier architectures (SVM, CNN, RNN) across EEG frequency bands.

TEACHING EXPERIENCE

Cornell University **Ithaca, NY**

Teaching Assistant, Natural Language Processing (CS 4740/5740) Spring 2026
Teaching Assistant, Principles of Large-Scale Machine Learning (CS 4787/5787) Fall 2025
Teaching Assistant, Intro to Reinforcement Learning (CS 4789/5789) Spring 2025

HONORS & AWARDS

NSF Research Traineeship Program "INTEGRATE" Fellowship Starting in Fall 2026

Cornell Bowers Undergraduate Research Experience (BURE) Research Grant Summer 2025
$7,000 research grant

Dean's List, Cornell University College of Engineering Fall 2022 – Spring 2026

INDUSTRY EXPERIENCE

Data-to-Decision **Clifton, Virginia / Remote**
Machine Learning Engineer *May 2023 — April 2026*

Pixelate **Ithaca, NY**
Co-Founder / AI Researcher *Jul 2024 — May 2025*