Yixuan Huang

yixuanhuang2004@gmail.com | https://yixuanhuang04.github.io/ | github.com/yixuanhuang04

Education

B.S. in Electronic Information Engineering | GPA: 91.24/100 Sep. 2022 – Present
Wuhan University of Technology (WHUT) *Wuhan, China*

Core Courses

- **Programming Fundamentals:** Introduction to C Programming (98), Computer Fundamentals & C Programming Lab (100)
- **High-Level Programming:** Python Programming (97.2), Java Programming (95.33)
- **High-Performance Computing:** CUDA High-Performance Scientific Computing (96)
- **Mathematical Foundations:** Probability and Mathematical Statistics (91.4)
- **Circuits and Systems:** Circuit Theory I & II (95.6, 97.4)

Research Interests

I am interested in learning-based robotics, focusing on robotic manipulation and physical interaction. My research aims to enable robots to acquire skills through self-supervised and trial-and-error learning, integrating visual, tactile, and proprioceptive inputs for robust perception and control, while leveraging classical algorithmic and planning methods for efficiency and reliability. Currently, I am working on algorithmic planning for robotic manipulation tasks. I am also broadly interested in autonomous systems that can operate reliably under uncertainty.

Experience

Research Assistant, Rutgers University (Remote) Jun. 2025 – Present
Research Focus: Multi-Robot Task Planning for Industrial Rearrangement, Robotics
Advisor: Prof. Jingjin Yu

Research Assistant, Shanghai Artificial Intelligence Research Institute Jul. 2025 – Oct. 2025
Research Focus: Robotics Perception, 3D Reconstruction, Manipulation
Advisor: Dr. Tianrui Shen

Research Assistant, Huazhong University of Science and Technology Apr. 2025 – Jul. 2025
Research Focus: Multi-Modal Robot Learning for Manipulation in Open Environments
Advisor: Prof. Guohui Li

Research Assistant, Wuhan University Oct. 2024 – Mar. 2025
Research Focus: Computer Vision & Image Recognition
Advisor: Prof. Ming Peng

Team Leader, China College Engineering Practice and Innovation Competition Jun. 2023 – Nov. 2023
Provincial First Prize, Ranked 2nd Nationwide
Supervisor: Prof. Yi Zhong

Projects

Pathology Slide Classification & LLM Distillation 2025

- Engineered CNN- and ResNet18-based pipelines for automated pathology slide classification, achieving 88% balanced slide-level accuracy.
- Designed and executed large language model distillation workflow, fine-tuning with slide-level metadata.
- Demonstrated effective transfer of contextual information from large models to lightweight classifiers for downstream tasks.

Pocket Frequency Meter 2025

- Engineered portable frequency meter using STC89C52RC microcontroller, integrating hardware design and

embedded firmware.

- Achieved ±0.1 Hz measurement accuracy across 100+ test signals.

Electronic Password Lock System 2025

- Designed and implemented FPGA-based electronic password lock system for secure access control.
- Developed finite-state machine control logic supporting password reset and verification, validated across 50+ test cases.

Digital Baseband Transmission System Simulation 2024

- Constructed digital baseband transmission model using ideal low-pass and raised-cosine filters to satisfy zero ISI conditions.
- Analyzed system behavior in time and frequency domains and quantified noise impact using eye diagrams under AWGN.
- Developed a complete simulation framework for signal processing visualization and performance analysis, validated over 1,000 signal instances.

Additional hands-on experience includes electronic music box, 21-key electronic keyboard, multi-functional quiz buzzer, and other embedded/hardware design projects. A full portfolio is available on my personal website.

Skills

Programming Languages: Python, C/C++, Java, MATLAB, Assembly Language, VHDL, HTML

Data Analysis & Machine Learning: Machine Learning, Deep Learning, Reinforcement Learning; NumPy, scikit-learn, OpenCV, TensorFlow, PyTorch, Matplotlib

Robotics & Simulation: MuJoCo, ROS

Hardware & Embedded Systems: Circuit Design, Microcontroller Programming, FPGA, Soldering, PCB Design, PCB Fabrication Tools

Software Tools: Linux, Git, LaTeX, CUDA, Jupyter Notebook

Certifications

- **Machine Learning Specialization** (Supervised, Unsupervised Learning, & Deep Learning)
  DeepLearning.AI & Stanford University (Instructor: Andrew Ng), Coursera
- **Fundamentals of Accelerated Computing with CUDA C/C++**
  NVIDIA Deep Learning Institute

Awards

Provincial First Prize, Ranked 2nd Nationwide 2023
China College Engineering Practice and Innovation Competition

Outstanding Academic Excellence Scholarship, First Prize 2023, 2024, 2025
Wuhan University of Technology

Outstanding Student Award 2023, 2024, 2025
Wuhan University of Technology

Service

Director of Student Affairs 2022 – Present
School of Information Engineering, Wuhan University of Technology

Executive Director 2022 – 2025
Student Union, Wuhan University of Technology

Class President 2022 – 2025
School of Information Engineering, Wuhan University of Technology