

Lanxuan Hong

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My ambitious goal is to build intelligent systems capable of physical interaction with the real world. I am currently developing sensors for humans and robots to capture the physical dynamics in the real-world.

EDUCATION

- **The Hong Kong University of Science and Technology, Hong Kong** 2023.09 - Present
Bsc in Computer Science, double major in Electronic Engineering
- **University of Washington, Seattle** 2026.01
Exchange Semester

PROJECTS

- **Tactile Sensor Design [C.1]** 2024.06 - 2025.03
Sensor design Robotics Real-time system MIRS Lab, HKUST
This project develops a tactile sensor for precise detection of soft, deformable surfaces (e.g., fabric) without causing deformation. Integrated this sensor with a robotic arm to achieve stable grasping of single-layer fabrics.
 - Characterized the deformation mechanics of multiple textiles from simulation and experiment.
 - Designed and fabricated the physical sensor prototype.
 - Developed and validate the real-time processing algorithms that maintained precise and reliable performance under dynamic environmental conditions.
- **Soft Material Simulation** 2024.10 - 2025.01, Ongoing
Robotics Sim2Real MIRS Lab, HKUST
This project simulates object deformation and force dynamics, builds reinforcement learning models in simulation.
 - Use Isaac Sim to build digital twins of soft objects for simulation and train robots in the digital environment.
 - Deploy on a real robotic arm for manipulation tasks.
- **Interactive Visualization Design [website]** 2025.11
Data visualization Web development User studies
This project builds a webpage to visualize the university students' caffeine consumption and healthcare metrics.
 - Design dynamic data storytelling experiences for insights and engagement.
 - Conduct comprehensive user studies and feedback evaluations to improve user experience
- **Wearable Device for Healthcare** 2025.02 - Present
Wearable Multimodal sensing Healthcare Project leader MINSys Lab, HKUST
This project develops an end-to-end wearable system to assist the Autism Spectrum Disorder (ASD) early screening, diagnosis and monitoring.
 - Conduct background research to align the technical architecture with clinical objectives and define the problem through experimental studies.
 - Integrate multimodal smartwatch data, including visual, acoustic, physiological signals, and IMU streams, to identify behavioral and mental state patterns.

PUBLICATIONS

- [C.1] Zhengrong Ling*, **Lanxuan Hong***, Xiong Yang, Yifeng Tang, Dong Guo, and Yajing Shen. A Highly Robust Contact Sensor for Precise Contact Detection of Fabric. In: *Proceedings of the IEEE International Conference on Robotics and Automation (ICRA)*. 2025. [\[paper\]](#)

SKILLS

- **Programming Languages:** Python, C++, Scala, JavaScript, TypeScript, HTML, CSS, MATLAB, VHDL
- **Developer Tools:** Linux, Git, PyTorch, Tableau, Isaac Sim, 3ds Max, Arduino, Xilinx, \LaTeX
- **Language:** Chinese (Native), English (Fluent)
- **Relevant Coursework:** Data Structures, Algorithm Design, Machine Learning, Deep Learning, Data Visualization, Principles of Programming Languages, Computer Network, Signal Processing, Circuit Analysis & Design, FPGA, Control Theory, Mobile Robotics

AWARDS

- **HKUST Admission Scholarship (full scholarship)** 2023.09
- **HKUST Dean's List** Fall 2023; Spring & Fall 2024; Spring & Fall 2025
- **AEON Credit Service (Asia) Scholarships** 2023 - 2024 Academic Year
- **HKUST UROP Sponsorships** 2025.05