Haiyu WANG (汪海玉)

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Education

M.ENG. The University of Tokyo, Electrical Engineering and Information Systems (On Going) — Oct 2024 - Aug 2026

- **Overall GPA:** 4.0/4.0
- **Research Area:** Flexible Electronics, Signal Processing, Meta-Surface

B.ENG. Southern University of Science and Technology, Communication Engineering — Sept 2020 - May 2024

- **Overall GPA:** 3.68/4.0 **Major GPA:** 3.84/4.0
- **Honors:** Excellent Graduates (10%), Merit Student Scholarship (15%) for 3 years
- **Research Area:** Signal Processing, Wireless Communication, Radio-Frequency Identification (RFID), Integrated Sensing and Communication (ISAC)
- **Courses:** Please refer to the official transcript

Publications

Welded Workpiece Image Acquisition System — Jun 2024

Haiyu WANG

CN221210339U, Utility Model Patent, China

Passive Respiration Detection via mmWave Communication Signal under Interference — Apr 2024

Kehan WU*, Renqi CHEN*, ***Haiyu WANG***, Chenqing JI, Jiayuan ZHU, Guang WU

2024 IEEE Wireless Communications and Networking Conference (WCNC)

Implementation of Anti-quantum Communication System using Software-Defined Radio — Jan 2023

Hongjia YANG, Jiarui XU, ***Haiyu WANG***, Chaofan WEN, Guang WU

2023 IEEE International Conference on Consumer Electronics (ICCE)

Projects

Non-destructive Detection of Tree Internal Internal Structure Based on RFID — Graduatation Project, Distinguished Undergraduate Thesis Award (Top 10%)

- Developed a rapid, low-cost, non-destructive system for detecting internal structures of trees using RFID technology, addressing a key challenge in ecological conservation.
- Built a hardware prototype and automated data processing scripts, achieving detection within 1 minute.
- Expanded application to agarwood trees with machine learning algorithm, and optimized internal structure detection accuracy to 94%.

Classic Optoelectronics Devices Fabrication — Optoelectronics Device Fabrication, Score: 90 [View my report]

- Fabricated a series of optoelectronic devices, including: Organic Light Emitting Diode (OLED), Quantum-Dot LED (QLED), Alternating Current Electroluminescent (ACEL) Device, and Organic Photovoltaic Device (OPV).
- Mastered all the involved fabrication technologies, including: spin-coating, vacuum evaporation and sputtering etc.

Gesture Recognition for Human-Computer Interaction (HCI) — C/C++ Program Design, Score: 96 [Github]

- Developed a gesture recognition system using OpenCV based on convex hull detection.
- Achieved efficient human-computer interaction such as cursor control and some shortcuts.
- Tools Used: C++, OpenCV

Laser Keyboard — Analog Circuits Laboratory, Score: 98[Github]

- Designed a usable and portable laser keyboard prototype that can project a keyboard layout on any flat surface.
- Utilized OpenCV to detect finger localization for interaction based on contour detection.
- Tools Used: Python, OpenCV

Experience

City University of Hong Kong, Dept. of Biomedical Engineering, Research Assistant — Hong Kong, China — Jul 2023 - Aug 2023

- Participated in the research of wireless gesture recognition with RFID tattoo.

Chengdu Neton Inc., Remote R&D Intern — Chengdu, China — Mar 2023 - Jun 2023

- Research and development of automatic measurement system for penetration. Prototype was built with Raspberry Pi 4B.
- Measured and recorded the penetration during laser welding process by Computer Vision (OpenCV, Python).
- Achieved a satisfying detection precision with test samples. The outcomes met the requirement of my employer.
- A related utility model patent is granted, and an invention patent is pending.

Technologies

Languages: Python(4 years), JAVA (4 years), MATLAB (3 years), C/C++ (2 years)

Tools: LabVIEW (2 years), ANSYS Electronics Desktop (1 year), CST Studio Suite (1 year), Blender (half a year)

Additional Information

- Teaching assistant of course *Fundamentals of Electric Circuits* in 2022.
- Invited to give review lessons on *Analog Circuits*, *Communication Principles*, and *Engineering Mathematics*. Recordings have got over 2000+ views on my personal Bilibili channel.