Wu Hanqing

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Education

Kyung Hee University - Undergraduate - Department of Electronic Engineering

2025.09 - Present

- **Academic Background**: Currently studying in the College of Electronics and Information. Admitted to Kyung Hee University with a strong record including TOPIK Level 5 (216 / 300), excellent high-school academic performance, and Gaokao results above the first-tier university threshold.
- **Academic Performance**: Demonstrates strong academic transfer and learning capability, and maintains high-level understanding and practical execution of major courses in a Korean-taught environment.
- **Semester GPA**: **3.625 / 4.3** (Percentage **93.63**).

Shanghai Normal University - Undergraduate - Automotive Service Engineering (Sino-German Program)

2024.09 - 2025.06

- **Coursework & Results**: Achieved GPA 3.68/4.0 in the first semester, with major courses including Advanced Mathematics, Comprehensive German, Spoken German, Python Programming, Engineering Drawing, and CAD. Achieved GPA 3.36/4.0 in the second semester, with major courses including Advanced Mathematics, University Physics, Fundamentals of Mechanical Manufacturing, Python Programming, Engineering Drawing, and CAD.
- **Comprehensive Development**: Built solid mathematical and physical reasoning, engineering logic, and initial cross-cultural communication awareness in a rigorous Sino-German teaching environment.

Core Competencies

Possesses interdisciplinary practical capability in "circuit design + embedded development + software implementation + fundamental mechanical design," and can independently carry out engineering tasks from concept to physical prototype.

- **Hardware Design & Soldering**: Able to use JLCEDA (Lichuang EDA) for two-layer PCB schematic and layout/routing design; experienced in both THT and SMD soldering, with foundational PCB debugging and troubleshooting skills.
- **Circuit & Simulation Fundamentals**: Familiar with basic analog and digital circuit principles; has hands-on experience using Multisim for basic circuit simulation and functional verification; independently designed and built an FM signal transmitter board.
- **Embedded & Programming Skills**: Proficient in Python (web scraping, automation, data processing); capable of ESP32 feature development using MicroPython; has entry-level C/C++ development ability.
- **Mechatronic Cross-Disciplinary Foundation**: Acquired basic capabilities in mechanical drawing, CAD, and SolidWorks during Automotive Service Engineering studies; understands fundamentals of mechanical manufacturing and material forming design.

Project Experience

ESP32 Runway Approach Light Ornament (Independent Development)

Runway_Approach_Light

This project is a desktop smart terminal that highly reproduces a civil aviation runway approach lighting system, combining ESP32 with hard-logic timing circuits to deliver realistic lighting effects linked with aviation weather information.

- **Hardware Engineering**: Adopted a two-layer PCB architecture; implemented mixed driving of 20 sequenced flashing lights and 48 steady-on lights based on NE556 + CD4017; supports global brightness control and adjustable flow speed; completed board-level soldering, assembly, and system bring-up.
- **Software Development**: Built AP provisioning and web parameter configuration using MicroPython and ESP32 Wi-Fi capabilities; supports airport ICAO code configuration and scheduled fetching/parsing of METAR and TAF weather reports.
- **System Interaction**: Uses a 0.96-inch OLED to cyclically display raw reports; combines physical knobs and buttons for power control, dimming, speed adjustment, and one-button provisioning, balancing visual fidelity and practical usability.

Automatic Cinema Announcement System (Independent Development)

Automatic-Cinema-Announcement-System

A Python-based cinema operation support system that improves on-site operational efficiency and standardization through automation.

- **Technical Implementation**: Used Requests to fetch real-time movie schedule data from Maoyan, built a visual GUI with Tkinter, and integrated Pydub and Pygame for intelligent voice-package synthesis and scheduled auto playback.
- **Project Value**: Automated ticket-check announcements with accurate schedule-based reminders, reducing manual workload and improving ticket-check efficiency.

Aviation Chart Query Website

chart.wuhanqing.cn

A web-based aviation chart query tool designed to provide aviation enthusiasts with convenient access to resources.

- **Development Practice**: Independently completed website architecture setup, data integration, and online deployment based on Alibaba Cloud servers and static web design. The site has reached over 3,000 visits, reflecting initial full-stack practice and practical problem-solving ability.

Languages & Certifications

- **Language Skills**: Native Chinese; Korean TOPIK Level 5 (216 / 300), capable of daily communication and basic academic communication; English for technical document reading and daily communication.
- **Language & Communication Certificates**: HSK Level 6 (272 / 300), HSKK Advanced (92 / 100), Mandarin Proficiency Test Level 2-A (91.7 / 100).
- **Technical Certificates**: NCRE Level 2 Python Programming, MS Office Application Level 1 Certificate, and Class A Amateur Radio Operator Certificate (Radio Association of China).