Personal Resume

Information

Name	李 堯（リ・ヤオ, Li Yao）	**Gender**	男
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Education

Jilin University (JLU), China, Bachlor's *Sept. 2019– Jun. 2023*

Applied Physics Major

Academic Experience

Major Courses

Theoretical Mechanics, Probability Theory, Probability and Mathematical Statistics, Mathematical Methods in Physics, Modern Power Electronics, Basics Principles of Embedded Software, Principles and Applications of Sensors, Electrodynamics, C Language Programming, Engineering Drawing etc. Self-studied Courses: Principles of Computer Composition, Operating System, Computer Network, Data Structure and Algorithm, Analog Electronics, Digital Electronics, C++ etc.

On-campus Academic Programs

- Design and production of high-power PWM amplifying circuit and LC filtering circuit.
- Face mask detection based on Huawei Cloud AI.
- Graduation Thesis: Deep Learning of Ising Model (Determining Macro Temperature from Ising Model Using Deep Learning)

CS144: Introduction to Computer Networking

The project of this course progressively built the entire TCP/IP protocol stack using C++, implemented IP routing and the ARP protocol, and finally used its

own protocol stack to replace the Linux Kernel's network protocol stack for communication with other computers. Currently developing the course project.

MIT6.S081: Operating System Engineering

An Operating System Engineering course based on RISC-V. Currently familiarizing myself with the course materials and preparing to commence work on related projects soon.

Project Experience

JLU RoboMaster Team | TARS_Go

Electronic Control *Jul.2020-Oct.2020*

RoboMaster (Chinese: 机甲大师) is an annual intercollegiate robot competition founded and hosted by the drone tech giant DJI. During my time in the lab, I've done:

- The circuit construction of the rotating target.
- C++ code design of the light response logic of rotating target.
- The speed control logic and PID optimization of the four Mecanum Wheels of the warrior robot.
- CAN bus communication between the components.

Fixed Active Noise Cancellation Device Research

Main Member *Jan.2021-Jun.2022*

Research on Active Noise Reduction Technology, rated as Jilin Provincial-level Innovation Project.

- Responsible for the Python implementation of the noise reduction algorithm on the upper computer, completing the visualization of the effect and the principle verification of the noise reduction performance.
- Responsible for code porting on the STM32F4 platform, development of the upper computer debugging interface, and completion of the model machine construction.

2021 "Internet+" Competition

Backend Engineer *Apr.2021-Sep.2021*

As a pioneer of a one-stop remote education experiment platform, this project provides a platform for remote operation and teaching of university physics experiments.

- Participate in the construction of the three-dimensional interactive scene in the Unity engine in the laboratory.
- Responsible for IoT integration of sensors and experimental equipment for remote access.

Jilin University LingXie Studio

Main Member *Jul.2021-Jun.2022*

The studio's work is mainly about embedded system design and software development. During my time in the studio, I've done:

- Electronic Design Competition Preliminary: Two-wheel Balance Car based on STM32 and Raspberry Pi.
- 2021 National College Electronic Design Competition: Track and Medicine Delivery Car based on ESP32 and Jetson Nano.
- Laboratory Open Source Robot Project: Six-legged Robot based on ESP32 and Raspberry Pi.

Project address: *https://github.com/JLU-Automation-Team/spider-robot/*

A Layer 3 Toy VPN

Jun.2023

A Layer 3 VPN server-client system implemented in Python, using TUN device for IP packet encapsulation and decapsulation. This integrated solution supports multiple sessions, includes session expiration handling, and applies simple base64 encryption for enhanced security.

Project address: *https://github.com/BH3GEI/Layer3ToyVPN*

Cloudflare Worker Proxy

Jun.2023

A Cloudflare Workers-based JavaScript project. It serves as a proxy, processing and forwarding HTTP(S) requests, enabling clients to access otherwise inaccessible network resources.

Project address: *https://github.com/BH3GEI/CloudflareWorkerProxy*

Hardware Control based on IEC61131-3 Standard

Jul.2023-Aug.2023

The project objective was to provide an IDE supporting IEC61131-3 programming languages (including Ladder Diagrams, LD; Structured Text, ST; Sequential Function Charts, SFC; Function Blocks, FB) for editing, execution, syntax checking, file reading and writing, etc. Then, based on the program written by the user, it monitors and controls the hardware's IO, axes, alarm information, etc., via NC-Link. During the project, my main tasks included:

- Encapsulated instructions for the NC platform: IO control, axis motion control, alarm control, etc.
- Learned principles of compilation, completed the development of semantic analysis code generation from structured text to C language

Company-related Development

Software Engineer *Aug.2023-Present*

- Desktop software development based on Delphi
- Developing test cases utilizing C and Python

Skills

Programming Language

- C/C++ (5000+ lines)
- Python (6000+ lines)
- Delphi (10000+ lines)
- Java, C#, Vue, HTML (5000+ lines)

Other Linux, Docker, Matlab, LaTeX

Honors and Award

JLU CTF Cybersecurity Competition

College Level Third Prize *Sep.2020*

RoboMaster 2021 Collegiate Alliance 3V3

Provincial First Prize *Oct.2020*

COMAP Mathematics Modeling Competition

Successful Participant *Mar.2021*

2021 National University Student Electronic Design Competition

College Excellent Award *Jul.2021*

"Internet+" University Student Innovation and Entrepreneurship Competition

National Bronze Award *Sep.2021*

TI Cup National Undergraduate Electronics Design Contest

Successful Participant *Nov.2021*

HUAWEI AI Practical Course

Outstanding Student Certificate *Jun.2022*

National University Mathematics Modeling Competition

Provincial Second Prize *Oct.2022*

USTC LUG Hackergame 2023

Group Ranking 6/40
Overall Ranking 268/2381 *Oct.2023*

Extracurricular Activities

Amateur Radio *Oct. 2020*

Callsign BH3GEI