Hao Zhang

OpenCV · Pytorch
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"PLUSULTRA!"

Education

School of Computer Science, Nanjing University of Science and Technology Zijin College

Jiangsu, China

Undergraduate Student, Computer Science and Technology — 2018.09 - Exp. 2022.07

- GPA: 88.10/100 (3.57/4)
- Ranked first in the school in academic year 2019
- Ranked first in grade in many subjects
- The amount of code before graduation reached 50,000 lines
- Won the honorary titles of "Outstanding Military Training Student", "Merit Student", "Advanced Individual" and "Excellent Student Cadre" from Zijin College of Nanjing University of Science and Technology for many times
- Won The First Prize Scholarship from Zijin College of Nanjing University of Science and Technology many times

Publications

Library management system integrating facial recognition and blockchain technology

Digital technology and applications

Second author [10.19695/j.cnki.cn12-1369.2021.03.47] — 2021.02

- Through the TopN algorithm, the "cold start" problem of new user recommendations is effectively solved, and the 1000goodbooks data set is used to avoid the sparsity problem.
- The system mixes content-based and collaborative filtering-based recommendation methods to recommend similar books or books liked by other users with similar preferences to the user.

Project Experience

Innovation and Entrepreneurship Practice & Competition Project

Facial expression recognition based on separate hybrid attention mechanism

Jiangsu, China

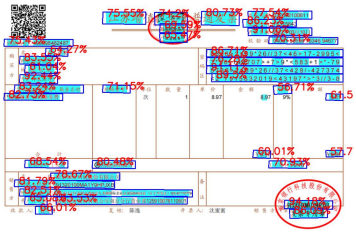
Preliminary Research[10.3969/j.issn.1001-893x.2022.09.002] — 2019.06

This is a project that my supervisor did when he was studying for a PhD at NTU. In the early stages of the project, I focused on research on facial algorithms and models. To solve the problem, I tested an ultra-lightweight facial recognition model for my team. After testing in the Windows environment and making the necessary optimizations and adjustments, I successfully compiled the project and ran it on the Linux system. The most exciting thing is that I also successfully deployed the model on a Raspberry Pi, achieving efficient and low-cost operation. This achievement provides our team with more possibilities and application scenarios.。[Code][Blog][Video]

VAT invoice automatic identification system

Jiangsu, China

Owner — 2022.04



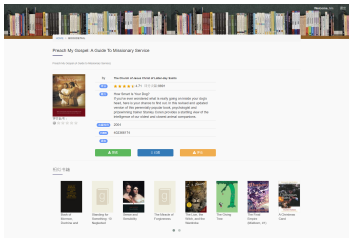
This is my graduation project, in which I chose the content of image recognition, and was selected by the school to participate in the "Golden Seed" project of the provincial outstanding graduation thesis. I used CTPN and CRNN algorithms to effectively identify the text under the invoice to solve the problem of recognition accuracy. At the same time, I also expanded this project to enable bank card text recognition. In order to build and evaluate algorithms for text segmentation, text object detection, and image classification, I chose the lPascal VOC Challenge dataset so that richer data can be obtained.[Code][Blog][Video]

Library management system integrating facial recognition and blockchain technology

Jiangsu, China

Participate

2021.02



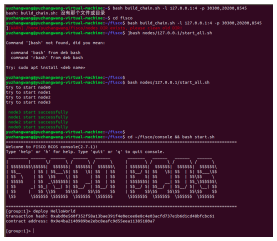
The TopN algorithm is used to effectively solve the "cold start" problem for new user recommendations, and a book recommendation system based on hybrid recommendations is designed and implemented to achieve accurate recommendations. Based on the data set provided by the 1000goodbooks website, it effectively avoids the sparsity problem. The hybrid recommendation system mainly mixes content-based recommendations and collaborative filtering-based recommendations. Among them, recommendations based on collaborative filtering mainly use user tag data to recommend other similar books through the books that the user has praised, or recommend to the user books that other users like with similar preferences. Furthermore, some features are used to connect users and books, called "user preference tags", and with the help of these "tags", it is possible to recommend books that the user likes.[Code]

Bank supply chain financial services implemented using Python based on blockchain

Jiangsu, China

Owner

2021.05



In the innovation and entrepreneurship training program for college students, I implemented a supply chain financial service system based on blockchain technology and Python language. This system can automate supply chain finance and improve the efficiency of bank loans. In terms of blockchain technology, I used smart contracts, blockchain consensus algorithms, distributed ledgers, cryptography and other blockchain technologies. In terms of Python, I use third-party libraries of the Python language, including web3, web3py, web3.py, web3.py, etc. In terms of supply chain financial services, I designed a model of supply chain finance, including the supply chain. This project broadened my understanding of blockchain and supply chain finance, and laid a certain foundation for possible scientific research on related content in the future.[Blog]

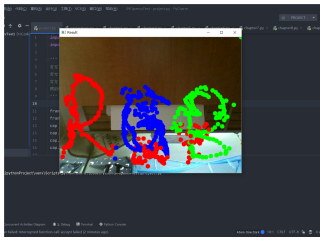
Personal Project

Colorful space drawing based on Opencv

Jiangsu, China

Owner

2021.07



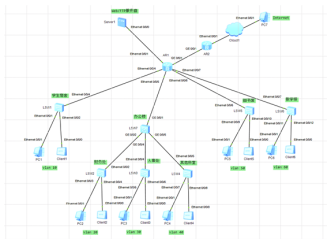
An innovative project was implemented using the OpenCV library and less than 100 lines of code to identify and track objects based on their color. Using computer vision technology, the image captured by the camera uses color filtering and segmentation algorithms to accurately extract the color information of the target object and draw a trajectory of the corresponding color in mid-air. Finally, it was realized that painting can be done according to the movement trajectory of the object in the hand, and the path color can be changed to the corresponding color according to the color of the object. This project showcases my computer vision technology and programming abilities, as well as my positive attitude toward innovation and practice.[Blog][Video]

Small campus network built using eNSP

Jiangsu, China

Owner

2021.06



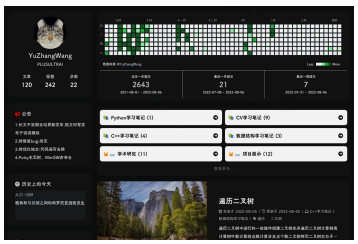
In this project, eNSP simulation software was used to build a small campus network and realize IP address allocation on the campus network. There are 50 computers in the student dormitory, 30 computers in the office building (the office building is divided into the Finance Department, the Human Resources Department, and other departments), 10 computers in the library, 30 computers in the teaching building, and 2 servers (FTP, Web), The school is connected to the server and the Internet through a router. It achieves Layer 2 interoperability within each department and Layer 3 interoperability between departments; static routing and RIP routing configuration are used; private network IP addresses are used within the campus, and all users can access the Internet through the campus network; all users can Use the Internet to realize resource sharing and access the Web/FTP server; student dormitories, libraries, and teaching buildings cannot access the Personnel Department and Finance Department; the server uses a static IP address, and other users use dynamic IP addresses.[Blog]

YuZhangWang's domain

Zhejiang, China

Owner

2019.01



This is my personal blog project, a purely static blog website based on Hexo, Github-Page, and the Butterfly theme. The website includes homepage, archives, categories, tags, movies, TV series, talks, photo albums, friend links, project introductions, resumes, and about several functional pages. Each page has many functions. The advantages of this project are that it utilizes resources efficiently, has extremely low implementation costs, and extremely low maintenance costs. The entire project costs only 200 yuan, and only needs to maintain one warehouse and does not need to maintain servers. It is low-cost, low-maintenance, and highly efficient. , multi-functional integrated blog website project.[Code][Blog]

Campus navigation system

Jiangsu, China

Owner

2021.05

This is my campus navigation project. I used the Floryd algorithm as the basis. After constructing the campus floor plan and obtaining distance and direction information between various locations, I implemented a fully functional campus navigation system. First, I constructed an accurate and detailed floor plan of the campus by measuring and mapping the exact locations of various locations on campus. Secondly, I used the Floryd algorithm to analyze and process the campus floor plan and calculate the shortest path between various locations. No matter where the user wants to start from, the system can quickly determine the shortest path and guide the user to reach the destination quickly. The system also provides a visual representation of the campus floor plan, where users can view and understand the distances and directions between locations. Through this campus navigation system, people in the school can quickly and accurately locate various locations and get guidance on the shortest path. This helps make traveling around campus more efficient.[Blog]

Student information management system

Jiangsu, China

Owner

2021.03

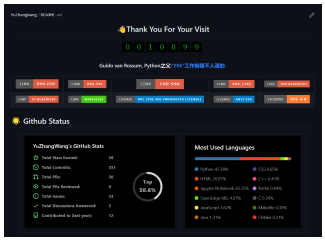
This is my student information management system project. I used the basic data structure content and implemented the rectification and deletion functions of the system to create an efficient and reliable student information management system. I implemented the rectification and deletion functions of student information in the system. Users can quickly retrieve the corresponding student information and modify or delete it by entering the student's student number or other identifier. This way, administrators can easily update student information, ensuring that the data in the system is always accurate and up-to-date.[Blog]

Awsome Github Introduction

Zhejiang, China

Owner

2023.06



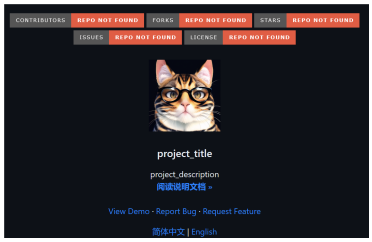
This is the intro page project created for my Profile. The first module records the number of people visiting the page, providing a visual record of visitors; the second part of the module records the Github project status and language usage, and implements a day and night dual-color display mode, and also adds a brief introduction to the personal technology stack; The third part of the module records personal information about me, and dynamically pulls the updated content of my blog every day, as well as dynamically pulls Douban movies, books and other information; the last part of the module uses picture links to leave contact information with different reviews.[Code][Blog]

Awesome Repository Template

Zhejiang, China

Owner

2023.06



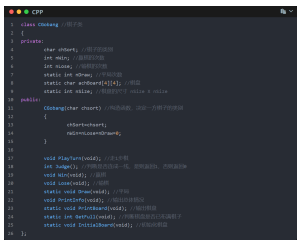
This is a template library I created for all my projects. I use this template library to create my personal projects. Of course, anyone can also use my templates to create projects. Among them, the workflow provides writing templates for users to propose issues and features, which improves the efficiency of project improvement; the .gitignore file can filter a large number of residual files from different operating systems and programming tools, improving the cleanliness of the user's warehouse; the README file provides a writing template, improving the quality of project documentation; providing a bilingual README in Chinese and English, which provides instructions for most users to understand and use the project. The entire template overall improves project quality and efficiency.[Code][Blog]

Four-piece connecting game based on C++

Jiangsu, China

Owner

2019.11



This is a Four-Son Connect game project I implemented based on C++. It expands on the original Three-Son Connect game and adds more difficult Four-Son Connect rules. In this project, I used basic data structures to store and organize the game's status and board information, and implemented simple visual interface operations through the command line interface. Compared with the traditional three-in-one game, the advantage of this project is that it introduces more difficult four-in-one rules, which is more challenging, and provides an intuitive gaming experience by realizing visual operations in the command line interface. In addition, basic data structures are used to manage and control the game state, making the code structure clear and easy to understand, and easy to expand and maintain. This four-piece connecting game project based on C++ has certain advantages in rule expansion, visual interface operation and data structure application. It not only retains the fun of the classic connecting game, but also increases the difficulty and challenge of the game. It is suitable for those who like strategy. Game players try.[Blog]

Blog-Friend-Link

Zhejiang, China

Owner

2023.06

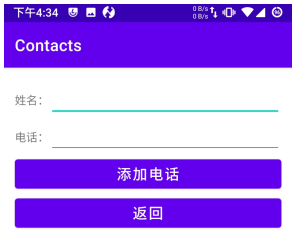
This is a remote friend link warehouse project based on JSON format, which aims to store all friend link information using JSON standard format. Users only need to create a branch in the friend link warehouse, add the friend link information of their personal blog to the corresponding file in JSON format, and submit a PR request to update the friend link to my personal blog. All friend link information is stored in JSON format, making the data structure clear and easy to manage and expand. In short, this remote friend link warehouse project based on JSON format is a simple and practical friend link management solution. Through standardized data storage format and convenient PR submission method, it realizes the rapid update and maintenance of personal blog friend links.[Code][Blog]

Demo production of Android address book app

Jiangsu, China

Owner

2021.04



This is an Android address book app developed based on Java. It provides several modules such as functional homepage, adding contacts, viewing all contacts and contact details. In terms of design, the MVC architecture and the combination of Activity and Fragment are used to realize the switching and display of the interface, and MMKV is used as a tool for data storage and reading. MMKV is a lightweight data storage framework with high performance and strong stability, which provides a simple and easy-to-use API for data reading and writing operations. This allows contact information in the address book to be stored and retrieved efficiently.[Blog]

Flower management system based on Maven

Jiangsu, China

Owner

2021.04

This project is mainly used to manage and display the types and floral information of flowers. This project includes multiple modules such as administrator login and registration, administrator management of flower types, administrator management of flower language information, and file upload functions. Struct, JSP, JDBC and other technologies are used. JSP is used as the View layer of MVC to display page information. Struct is used as the Control layer of MVC for business logic processing. JDBC is used to connect to the database and process database data. Use Mysql as the underlying data storage to ensure the security and reliability of flower information.[Blog]

Open source related

Gridea Theme NexT

Zhejiang, China

Contributor

2021.10

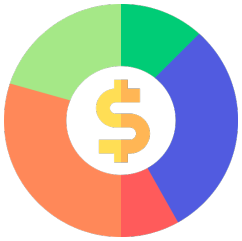
Gridea is a powerful and simple blog generation software, and NexT theme is a beautiful theme provided by it. I made as many as 50 source code changes for the NexT theme. I repaired existing bugs, and through careful analysis and troubleshooting, I found some existing problems in the NexT theme and fixed them; I adjusted the theme style to make the NexT theme more in line with the aesthetic needs of users. By adjusting the design of fonts, colors, layouts, etc., I enhanced the visual effects of the theme, making the blog page more comfortable and beautiful; I added a new blog running time statistics function to the NexT theme. My work contributes to the development of the NexT theme, improving user experience, feature extensibility, and overall performance.[Code]

Expense Tracker

Zhejiang, China

Contributor

2023.06



An Indian developer and I designed a web application built on ReactJS, Node.js, and MongoDB to help users track expenses, income, and budgets. In this project, I was mainly responsible for project layout and post-testing, and made important contributions to the smooth progress of the project. My contribution in post-testing cannot be ignored. I am responsible for writing test cases, executing the tests, and analyzing the results. I work hard to explore various scenarios and interaction situations to ensure system stability and functional correctness. Working closely with Indian developers, we actively feedback issues and improvement suggestions, and work together to fix and optimize the code to ensure that web applications can run properly on different devices and browsers with good performance and reliability.[Code]

Angry Trump

Zhejiang, China

Owner

2022.04

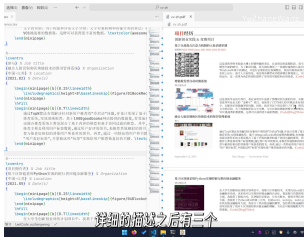
This is a case of practical application of the FaceSwap open source project. In this case, I used the FaceSwap project to extract Trump's face and use it in videos that need to replace faces. In order to achieve this goal, I performed face recognition and used RTX3060 for training. By continuously iterating and reducing the loss function (loss), an angry Trump video was finally generated. The advantage of this project is to train a Trump model with a size of 5.39G, so that it can be applied to face replacement tasks in other videos.[Video]

Self-media video produced based on RVC

Zhejiang, China

Owner

2023.09



I used the Retrieval-based-Voice-Conversion-WebUI project and successfully trained an impressive voice model. With this model, I was able to transform my voice into a beautiful female voice in real time. To show how powerful this technique can be, I've also created a sample video. Doing so will not only attract the audience's attention, but also allow them to better understand and feel the charm of this sound conversion technology. With this example video, I hope to show more people the potential and possibilities of this innovative technology. It can not only improve the quality and appeal of audio content, but also bring more innovation opportunities to individual creators and the audio media industry.[Video]

Novel-AI for Cat

Zhejiang, China

Owner

2022.10

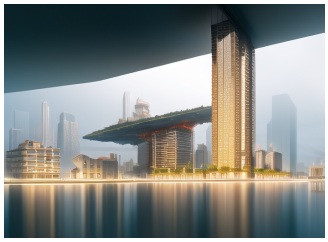
This is a case of practical application of the Novel-AI open source project. The project was based on a cat picture, and through continuous iteration and optimization, it finally generated three cat pictures that met the target requirements, namely a cat wearing glasses, black and yellow stripes, and a slightly serious cat. Over multiple iterations, I tried different glasses and pupil styles, compared the results, and optimized for the shortcomings of each generated image, and finally obtained three images that met the target requirements. This project not only demonstrates technological innovation and progress, but also brings people a novel and interesting image generation experience.[Code]

Novel-AI for Zaha Hadid

Zhejiang, China

Owner

2023.07



This is a case of practical application of the Novel-AI open source project. In this case, I used the Novel-AI project for architectural design, inspired by the fantasy and surreal design style of world-renowned architect Zaha Hadid. Based on Zaha Hadid's legacy Aliyev Cultural Center, I finally created a building that conforms to the surrealist design style through iterative design. This project not only demonstrates technological innovation and progress, but also brings novel and interesting design concepts and visual experiences to the field of architecture.[Code]

YaSei-LuoXiang

Zhejiang, China

Owner

2022.04

This is a case of practical application of the FaceSwap open source project. This project aims to replace faces in relevant video clips involving Wuyingge’ s famous emoticons, providing users with an entertaining viewing experience. In this case, the main challenge is that the video content involves the recognition and replacement of multiple faces, and it is necessary to accurately screen the target faces to ensure that only specific faces are replaced without mistakenly replacing other faces. This project is not only entertaining, but also demonstrates the innovation and development potential of facial recognition technology in practical applications.[Video]

Yanderifier for Attack On Titan Theme

Zhejiang, China

Owner

2023.02

This is a case of practical application of the Yanderifier open source project. The Yanderifier project aims to add dynamic effects to a fixed human face. In this case, we use the Yanderifier project to sing the target song and ensure that the mouth shape of the human face can accurately align with the rhythm and lyrics of the song. The project creates a unique and interesting singing experience, which not only demonstrates the innovative application of the Yanderifier project in the entertainment field, but also demonstrates the progress and potential of facial recognition and dynamic effects technology.[Video]

Chinese independent blog

Zhejiang, China

Contributor

2022.12

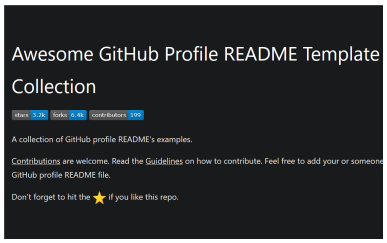
More than once I heard someone say: "In China, the era of independent blogs has passed." But an independent blog can have its own domain name, can be freely typeset, and can realize various functions that other platforms cannot provide. Independent blogs do have a problem in how to acquire new readers. Therefore, there was this project, and I made my contribution to this project. I successfully added my personal blog to this project, and contributed to the independent blog of the Chinese people.[Code]

Awesome GitHub Profile README Template

Zhejiang, China

Contributor

2023.06



This project aims to collect great profile pages on GitHub, and I successfully added my profile page to it. The advantage of this project is that it can display a variety of impressive personal introduction pages and provide rich learning cases for latecomers. Through this project, people can get ideas and inspiration from other people's profile pages. Each person's profile page is unique and showcases their skills, experience, and personality traits. This project provides users with an opportunity to browse a variety of excellent personal introduction pages in one place, making it easier for them to learn and borrow from others' design and content expressions. Overall, this project provides a handy resource for anyone who wants to improve their profile page, allowing them to benefit from the design and content presentation of others.[Code]

Leadership Experience

Office of the Dean of the School of Computing, Zijin College, Nanjing University of Science and Technology

Jiangsu, China

Assistant to the Dean

2019.03 - 2020.2

- Assist the dean in managing daily administrative affairs, such as processing documents, preparing meeting materials, etc.
- Responsible for communicating with all parties inside and outside the hospital, responding to emails, answering phone calls, etc. on behalf of the dean.
- Participate in and coordinate various projects within the hospital to ensure that projects are completed on time and communicate with relevant personnel
- According to the instructions of the dean, handle affairs related to college affairs, such as budget preparation, personnel affairs, final scholarship assessment, etc.
- Assist the dean in performance evaluation, collect and analyze relevant data, make improvement suggestions and participate in implementation
- Regularly on duty in the dean's office to collect visitor information

Nanjing University of Science and Technology Zijin College Student Union

Jiangsu, China

Deputy Minister of Student Rights and Interests Protection Department

2019.04 - 2020.04

- Assist in resolving student disputes, mediate, negotiate or seek appropriate solutions to protect the rights and interests of students
- Organize department members to participate in and prepare weekly feedback symposiums between students and principals, and record student opinions
- Organize rights education activities and plan various forms of rights education activities

Class 1, Computer Science and Engineering, Zijin College, Nanjing University of Science and Technology

Jiangsu, China

Study Monitor — 2018.09 - 2022.07

- Tutoring and helping classmates, self-organized tutoring work in mid-term and final exams over the past four years, helping the class to maintain the first place in the school in passing rate and good rate in the four years
- Organize learning resource sharing, upload notes to the group after class, and send a total of more than 2,000 photos in four years
- Assist teachers to manage the learning process, record the content of each class assignment, distribute learning materials, etc.
- Promote the construction of a learning atmosphere, use yourself as an example, strictly observe discipline, pay attention to personal qualities, and ensure that the class's four-year outstanding rate remains first in the hospital

Nanjing Jiangsu Sixing Military Training Base

Jiangsu, China

Military training assistant — 2019.06 - 2019.08

- Help organize and coordinate military training-related matters, including communicating with instructors, students and other relevant parties to ensure the smooth execution of military training plans
- Manage students' attendance and ensure they participate in military training activities on time
- Pay attention to students' physical and mental health and provide necessary psychological counseling and support
- Communicate with students and instructors in a timely manner to understand their needs and feedback

Daixi Town Central Health Center, Wuxing District, Huzhou City

Zhejiang, China

COVID-19 Volunteers — 2020.02 - 2020.05

- Assisted nurses to measure and record the body temperature of patients entering and leaving the hospital at the hospital entrance
- Produce video clips about the epidemic to support Wuhan’ s epidemic work [Video]

Honors & Awards & Certificates

International

2019	**Excellence Award,** APEC organizes online selection	Jiangsu, China

National

2021	**Colorful space drawing software based on OpenCV,** National Copyright Administration of the People's Republic of China	China
2021	**YuZhangWang's domain blog software,** National Copyright Administration of the People's Republic of China	China
2020	**HCIA-AI,** Huawei	China
2019.05	**CET6,** The Ministry of Education Examination Center	China
2018.11	**CET4,** The Ministry of Education Examination Center	China
2019	**Certificate of Responsibility for National Compulsory Tree Planting,** China Greening Foundation, National Greening Committee Office	China
2020	**Certificate of Responsibility for National Compulsory Tree Planting,** China Greening Foundation, National Greening Committee Office	China
2021	**Certificate of Responsibility for National Compulsory Tree Planting,** China Greening Foundation, National Greening Committee Office	China
2022	**Certificate of Responsibility for National Compulsory Tree Planting,** China Greening Foundation, National Greening Committee Office	China

Provincial

2020.04	**Second Class A Mandarin Certificate,** Jiangsu Provincial Language Working Committee Office	Jiangsu, China
2020	**Certificate of thanks,** Jiangsu Provincial Blood Center	Jiangsu, China

University-level

2019.10	**The First Prize Scholarship,** Nanjing University of Science and Technology Zijin College	Jiangsu, China
2020.04	**The First Prize Scholarship,** Nanjing University of Science and Technology Zijin College	Jiangsu, China
2019.04	**The Second Prize Scholarship,** Nanjing University of Science and Technology Zijin College	Jiangsu, China
2021.04	**The Second Prize Scholarship,** Nanjing University of Science and Technology Zijin College	Jiangsu, China
2019.12	**Merit Student,** Nanjing University of Science and Technology Zijin College	Jiangsu, China
2020.12	**Merit Student,** Nanjing University of Science and Technology Zijin College	Jiangsu, China
2020.12	**Excellent Student Cadre,** Nanjing University of Science and Technology Zijin College	Jiangsu, China
2019.12	**Advanced Individual,** Nanjing University of Science and Technology Zijin College	Jiangsu, China
2018.09	**Advanced Individual in Military Training,** Nanjing University of Science and Technology Zijin College	Jiangsu, China
2019	**Second prize,** "The Beauty of Tenacity·You and I Walk Together" The 7th Sign Language Exercise Competition	Jiangsu, China
2019	**Second prize,** Campus sports team	Jiangsu, China

Skills

Main programming languages	Python, C++, Javascript, Html, CSS
Putonghua ability	Class II, etc.
English ability	CET-4: 515, CET-6: 449
Machine learning	PyTorch, OpenCV
Front-end and back-end development	Django , Flask
Robot related	Raspberry Pi
Driving related	Type C car driving license
Photography related	The food photos have been exhibited twice [1st][2nd]
Video Maker	Video producer at Bilibili, currently has 760,000 views [BiliBili home page]