Sun Shihao

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Male | Age: 25 | Job Search: R&D Engineer

educational background

Shanghai Ocean University (Double First Class) Master of Electronic Information 2020.09-2023.6

- **Honors**: 2020-2021 University Second Class Academic Scholarship, Third Prize in Graduate Student Mathematical Modeling Competition, Certificate of English IV ;
- **Majors**: machine learning, theory of computation, advanced engineering mathematics;
- **Main Achievements**: Thesis "Adaptive Buffer Capture And Storage For High-Speed Cameras"; Patent "A Massive Data Asynchronous Storage Method For High-Speed Video Measurement", Patent No. 2021110731783.0; "An Adaptive Capture And Storage Method For High-Speed Video Data, Patent No.: 202210215620.1; Luo Zhaozhao mow Foundation projects; Softwritings: "High-speed Video Acquisition System", "Rapid Evaluation Software for Earthquake Disasters", "Public Platform for Sharing Information on Earthquake Disasters";

Zhengzhou Light Industry University Communication Engineering Bachelor's Degree 2016.09-2020.06

- GPA: 3.25/4 Professional Ranking: 10/56
- **Honors**: Second Class Scholarship, Third Class Student, Outstanding League Member;
- **Major** Courses: C Language Design, Data Structures, Computer Networks, Digital Circuits, Analog Circuits.
- **Major Achievements**: Second Prize in School ACM Programming Competition,Second Prize in Provincial Communication Skills Competition

Vocational Skills

- Proficiency in the use and understanding of data structures with common sorting, recursion, backtracking, and bisection algorithms, and solving algorithmic problems using data structures such as stacks, linked lists, and queues;
- Proficient in C syntax, familiar with embedded SDK development, familiar with Linux development;Understanding of multi-threading, high concurrency, concurrency safety, and the ability to program in different operating systems;
- Familiar with Linux instructions , familiar with the kernel communication stack;
- Familiar with C++ language, JAVA language;

Work and Internship Experience

KGXX Technology Co. R&D Engineer 2024.02-xx

- **Technology stack:** C, JavaScript, embedded development;
- **Job Description:** Initial verification of the company's chips, CMDEL verification and SDK development and maintenance
  - The company's chip products FPGA simulation verification, mainly including VLAN, NAT, ECMP, OAM, XVAN, IP and ot her chip functions to ensure the smooth progress of early development;
  - The chip is adapted and developed based on the company's SDK architecture, mainly including the adaptation and developm ent of IP, nat, vlan, ecmp, OAM, xVLAN and other functions, the hash algorithm of the adaptation chip, and the packaging pr otocol stack related interfaces developed ;
  - The automation tools of the test platform are built and maintained, and the Spirent tester is connected to the automatic chip f unction verification ;

Suzhou Xiongli Technology Co. R&D Engineer 2023.07-2024.02

- **Technology stack:** C, JavaScript, embedded development;
- **Job Description:** Main switch system software development and maintenance work, including IGMP, IGMPSnooping, GMRP multicast module switch system device management functions.The development and porting of the module. Maintain and develop the CLI command line and website interface of related modules to ensure stable operation of the modules. Participated in the research and development of the company's IPSec_VPN board, realizing the interaction with the chip by sending data through CLI, and initially realizing the IPSec encrypted transmission channel based on Strongswan.
- **Individual Contributions:**
  - Completed the porting and development of multicast module and daily maintenance, including the porting and development of Layer 3 IGMP, Layer 2 IGMPSnooping and GMRP, as well as the development and adaptation of chip SDK, and daily maintenance of several functions to ensure that the module operates normally;
  - Synchronized development of CLI and web for the device management module of the switching system to realize software upgrade, master and backup version replacement, and remote upgrade (Ymodem) functions;
  - Carry out the research and development of IPSec_VPN board project, develop SDK to adapt ISE chip, realize CLI to send down the encrypted channel data, realize the function of adding, deleting, changing and checking the data;
  - Porting Strongswan open source code, negotiating and sending data to ISE chip through Strongswan, initially realizing the autonomous negotiation function of the switch system;

Shanghai Junzheng Network Technology Co., Ltd (Hello Travel) Backend Developer Intern 2022.07-2022.10

- **Technology stack:** Spring, Redis, TestNG;

- **Job Description:** Engaged in back-end research and development and testing work in two rounds of operation and maintenance, mainly responsible for the development of automated service interface platform and BOS end operation and maintenance APP development and testing work. Under the framework of the team, he is responsible for the modification of the interface of the scenic car and the technical reform of the maintenance mode, and realizes the automatic generation of the associated interface and service for the modification of the service side method;

- **Individual contributions:**
  - Changes to the Scenic Vehicle interface are mainly Scenic Vehicle support for unified loading and unloading interfaces for O&M personnel, which requires Apollo platform configuration;
  - Technical changes to the maintenance model based on PRD;
  - Personally responsible for the back-end interface of the automated service interface platform with the query of the service and part of the front-end interface. Utilizing TestNG open source testing framework to connect Fox automated testing platform and gitLab code management platform to speed up the iteration efficiency of the operation team. Also responsible for participating in the development and testing of the scenic car placement and operation and maintenance functions of the B-end APP.

Research experience

High-speed camera acquisition and storage software development Participant 2020.10-2021.04

Technology stack: C++ , MFC , OpenCV , python ;

- **Research content:** Develop a set of high-speed camera-based sequence image real-time acquisition, storage and synchronization control and processing programs using C++ MFC module to realize real-time acquisition, efficient transmission and lossless storage of high-speed sequence images by the main control machine and industrial control machine, and the synchronization control module to ensure the synchronization of the collected left and right images.

- **Individual Contributions:**
  - Completed high-speed camera software development and realized 500fps/s image real-time capture transmission and lossless storage, utilized memory circular buffer to buffer the captured data;
  - It realizes frame-skipping playback and marker detection for multiple frames of captured images, and uses neural network model and improved 2D code camera calibration method to automatically identify the markers in the images and automatically calibrate the camera;
  - Realize automated image acquisition, camera calibration, marker identification, export marker displacement function automatically calculates the marker displacement, velocity, acceleration and other parameters; - In addition, through the FPGA acquisition and storage acceleration, high-speed sequence data through the FPGA module to realize the temporary storage function, data through the PCIE interface to achieve high-speed transmission, data storage through the memory cycle buffer efficient storage.

Self-Esteem and Interests

- Self-evaluation: Computer science class, solid theoretical foundation, strong practical ability, mathematical thinking, as well as strong abstract thinking;

- Hobbies: love programming, love to learn new knowledge, always keep writing algorithmic questions to enrich myself; love sports, basketball, soccer, cycling, badminton, Go, etc.;

- Personality: study hard, study hard, and develop the qualities of rigorous thinking, prudence, and perseverance;

- Personality: optimistic and cheerful, friendly with others, easy to adapt to new environment;