Yang Zhi

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Job intention: Software development engineer

Educational Background

Hangzhou Dianzi University	Master's	Electronic Information	GPA: 4.05	2022 – Pres.
Hangzhou Dianzi University	Bachelor's	Electronic Information	GPA: 3.70	2017 – 2021

Awards

- Academic second-class scholarship 2023
- Provincial Government Scholarship、First-class scholarship 2017-2021
- Provincial outstanding graduates 2017-2021

Scientific research

Published 1 SCI paper 2024.07

SDANet: Sub-domain Adaptive Network for Multi-fault Diagnosis of Lithium-ion Battery Packs(First author)
Journal of Energy Storage (SCI TOP journal of the Chinese Academy of Sciences 2, IF = 9.4)

Skills

- Proficient in **C/C++**, with a solid understanding of pointer usage, memory management, STL containers, and their underlying implementations; experienced with the **Pytorch** deep learning framework.
- Familiar with common computer network protocols such as **HTTP, TCP/IP, UDP**.
- Knowledgeable in operating system concepts and common **Linux** commands, including inter-process communication, thread synchronization and mutual exclusion, and memory management.
- Understanding of **MySQL** usage and principles, including indexing, transactions, and locking mechanisms.
- Familiar with the basic principles of **Redis**, including common data types, persistence mechanisms, and caching.
- Foundational knowledge in deep learning (CNN, RNN, TF, etc.); familiar with common unsupervised learning methods, such as transfer learning and masked learning.
- Basic knowledge of front-end programming; experience with microcontroller development (e.g., STM32); good habits in **git** version control.

Internship Experience

SCANTECH (Hangzhou) Software Development Engineer July 2024 – Present

- Participated in the development of client software interfaces for 3D scanners, responsible for decoupling verification and import functionality of the **QT** software activation module, and iterating the device authorization method.
- Established a web download platform for soft authorization files based on **Flask**, with back-end functionalities including authorization information reading, secondary encoding, and large file resumable uploads.
- Configured reverse proxy and deployed **SSL** certificates on the soft authorization download platform using **Nginx**, enabling **https** access and port mapping.
- Participated in code reviews, discussing adherence to best practices and coding standards for client software.

Project Experience

Cluster Server Based on the Muduo Open Source Network Library Mar 2024 – Apr 2024

Project Overview: Developed a cluster chat application using the Muduo open source network library, supporting features such as adding friends, private messaging, group chat, and offline message storage.

- Implemented communication between the client and server using the **Muduo** network library, transmitting and parsing messages based on JSON.
- Cached user login data and implemented publish/subscribe functionality using **Redis**, reducing the load on **MySQL** and enabling communication between cluster servers.
- Used **Nginx** as a load balancer to increase the overall concurrency of the server.

Lightweight Multithreaded Web Server Based on Linux Dec 2023 – Feb 2024

Project Overview: This project involves the development of a lightweight multithreaded HTTP server framework in a Linux environment using C++.

- Utilized the Reactor high-concurrency model to handle multiple connections, using **Socket** for communication between different hosts.
- Employed **I/O** multiplexing techniques, using **epoll** in edge-triggered mode to listen for multiple I/O requests, improving the server's throughput capacity.

- Processed GET requests from browsers using finite state machine logic for efficient parsing of **HTTP** messages.
- Implemented a **timer** using a min-heap to maintain connection timeout, promptly closing inactive client connections.

Fault Diagnosis and Performance Monitoring of Lithium Batteries Dec 2022 – Dec 2023

"Provincial Key Laboratory of Intelligent Automotive Electronics / National Natural Science Foundation Project"1. Obtaining or lacking fault samples with full coverage of operating conditions poses challenges for diagnosis; 2. The nonlinearity and complex coupling relationships of lithium batteries increase the difficulty of decoupling faults; 3. The electrochemical model method relies on complex physical parameters, resulting in insufficient robustness.

- Simulated lithium battery pack faults based on **Simulink** simulation and real fault platforms, constructing a performance characterization dataset for batteries under multiple conditions and faults.
- Designed a multi-level feature and attention-guided Bi-GRU composite module to guide upstream extractors in extracting key fault information from the multi-dimensional time series of the battery.
- Utilized fine-grained subdomain information and label smoothing techniques to reduce reliance on pseudo-labels in transfer learning, achieving alignment in high-dimensional data space.
- Designed an online battery pack performance analysis system based on the **QT** platform, integrating multiple models for monitoring battery pack faults, **SOC**, **SOH**, and other states.