Vincent Lu

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Date of Birth: 1995-11-23
Gender: Male
Education: Bachelor's Degree, Wenzhou University
Major: Computer Science and Technology

Personal Profile

I am a full-stack architect with a deep passion for technology, having extensive experience in the Internet of Vehicles (IoV) and automated warehousing fields. I excel at building high-concurrency, high-availability systems. My expertise spans Java, Spring, React, Vue, as well as Docker, Netty, PixiJs, and ThreeJs. I have led teams to successfully deliver complex projects multiple times, adept at transforming requirements into innovative and stable solutions that generate substantial value for enterprises.

Skill Set

- Technologies：Java, Spring, Netty, ReactJs, VueJs, Mysql, Docker, PixiJs, ThreeJs
- Algorithms：AStar, Dijkstra, Wavefront Expansion

Work Experience

Zhejiang Zhongyang Automated Warehouse Technology Co., Ltd.

Software Department Manage | May 2020 - Present
Responsible for AS/RS automated warehouse systems (WMS, WCS, PDA), AGV scheduling systems, map editors, and BS digital twin solutions

Zhejiang Zhenggong Holdings Group Co., Ltd.

Full-Stack Developer | October 2018 - May 2020
Car rental business (shared car app) and electric vehicle charging pile business (EV charging app)

Zotye Automobile Co., Ltd.

Java Developer | June 2017 - October 2018
Gateway server development for new energy vehicles and development of an open platform for automotive services

Project Experience

RCS Unmanned Transport Vehicle System

- AGV Scheduling System: Developed path planning and task allocation algorithms, achieving non-blocking operation of 100 AGVs in a 5,000-square-meter space; the fastest algorithm runs in 0.01 seconds. Supports multi-bin CTU equipment operations, automatic obstacle avoidance, and charging
- AGV Map Editor: Enables rapid on-site implementation through a user interface and supports quick barcode map generation via CAD import
- RCS Management System: Includes modules for vehicles, storage locations, barcodes, tasks, traffic, batch operations, open platforms, etc.
- Digital Twin System (BS mode): Offers real-time 3D visualization of warehouse status
  Tech Stack: Spring、Netty、React-Admin、PostGresQL、PixiJs、ThreeJs

Automated Storage & Retrieval System (AS/RS)

- WMS (Warehouse Management System): Features inbound/outbound, inventory, picking, and pallet merging functionalities. An open platform interfaces with ERP, MES, and other third-party systems, enabling order reception, wave task generation, picking, and data write-back
- WCS (Warehouse Control System): Controls PLC equipment such as stackers, shuttle cars, and conveyor lines, triggered by PDA for inbound/outbound processes. Coordinates with WMS for workflow execution, providing standardized APIs for task dispatching and status reporting
- Types of Automated Warehouses: Stacker warehouse, two-way shuttle warehouse, four-way shuttle warehouse, CTU warehouse, etc.
  Tech Stack: Spring、ReactJs、Antd

Car Rental

- Shared Car App: Rental process, geofencing, vehicle control, payment, withdrawal, user profile, etc. Responsible for the backend API and its documentation
- Vehicle Gateway: Supports unlocking, starting, honking, and air-conditioning control for vehicles. Custom data protocols collect vehicle information for real-time alarm detection

- Management System: SaaS-based merchant management platform providing vehicle location monitoring, rental status, and statistical reports
  Tech Stack: Spring、VueJs、Netty

EV Charging Piles

- EV Charging App: Handles charging operations, map search optimization, charging pile control, and cash transactions. Responsible for the backend API and its documentation
- Charging Pile Gateway: Supports starting/stopping charging, power control, and other features. Custom data protocols facilitate real-time alarm detection based on charging pile status
- Management System: SaaS-based merchant management platform offering charging pile location maps, charging status tracking, and statistical reports
  Tech Stack: Spring、Layui、Netty

IoV Platform – Gateway

- New Energy Vehicle-Machine Interaction System: Built a TCP/IP gateway server
- Compliance with National Standards: Collects vehicle data according to GB32960 and JT/T808
- Microservices Cluster Architecture: Developed custom encoders and decoders for message processing
- Load Balancing: Single vehicle model deployment can support up to 40,000 vehicles, using Nginx to distribute server load
  Tech Stack: Spring、Quartz、Redis、Nginx、Mina