

# Otavio Augusto dos Santos

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Software Engineer with strong backend ownership and experience designing, building, testing, deploying, and operating scalable cloud-native backend and SaaS platforms using Java, Spring Boot, REST APIs, microservices, AWS, Docker, relational databases, and event-driven architecture. Experienced across the full software development lifecycle, from technical discovery and architecture design to implementation, automated testing, deployment, monitoring, incident response, and continuous evolution. Focused on scalability, reliability, clean code, code reviews, database performance, observability, and maintainable software. Uses AI-assisted development workflows and AI code agents to accelerate technical reasoning, coding, debugging, refactoring, architecture decisions, documentation, and solution validation while preserving strong ownership over code quality.

## WORK EXPERIENCE

### Software Engineer

WEG

Aug 2023 – Present

WEMOB Electric Mobility Platform

Jaraguá do Sul, Brazil

- Own backend services end-to-end, from technical refinement and architecture design to implementation, testing, deployment, monitoring, maintenance, and production support.
- Design and evolve scalable backend architectures using Java, Spring Boot, REST APIs, microservices, asynchronous messaging, and AWS services, with focus on resilience, fault tolerance, maintainability, and clean code.
- Optimized backend services, database usage, and query patterns, downsizing AWS RDS and reducing monthly database costs from ~\$800 to ~\$300 (-62%) without performance degradation.
- Led performance optimization of the OCPP backend server, increasing capacity from an initial study of ~300 concurrent charging stations to 2,000+ stations in production, with internal stress tests supporting up to 5,000 concurrent stations.
- Designed and operated high-concurrency WebSocket and microservice infrastructure for OCPP communication, handling heartbeats, reconnections, timeouts, retries, and production failure scenarios.
- Implemented transaction, pricing, and billing-related flows for electric vehicle charging, ensuring idempotency, consistency, data integrity, and reliable real-time communication with charging stations.
- Architected and developed a complete payment gateway integration, covering transaction lifecycle, asynchronous processing, error handling, and consistency guarantees for billing operations.
- Built the WEMOB API Exchange module, enabling customers and ERP systems to consume secure REST APIs for real-time and time-series platform data, supporting B2B integrations and technical onboarding.
- Designed and developed from scratch a cloud-native telemetry gateway, ingesting vehicle data through Kafka/Azure Event Hubs, webhooks, and polling-based vendor APIs.
- Architected a shared normalization pipeline to standardize vendor payloads into a common platform contract, centralizing vehicle identity resolution, cache extraction, Firehose dispatch, and ingestion-level error handling.
- Implemented hot/cold storage with Redis for low-latency latest-state reads and AWS Firehose with S3/Parquet for historical telemetry, reducing pressure on relational databases and enabling Athena-based querying.
- Contribute to engineering quality through automated testing, code reviews, design reviews, technical documentation, mentoring, agile rituals, incident response, root-cause analysis, and production support, using AI-assisted development workflows to accelerate reasoning, coding, debugging, refactoring, architecture decisions, and documentation while preserving code quality.

### Software Development Apprentice

WEG

2021 - 2023

CentroWEG Team

Jaraguá do Sul, Brazil

- Contributed to enterprise systems using Java, REST APIs, relational databases, cloud fundamentals, automation scripts, and Git-based workflows.
- Designed and developed an internal IT demand management system from scratch, covering requirements, backend implementation, database modelling, and web interface integration.
- Applied software engineering fundamentals in real company projects, including architecture, data modeling, API design, version control, testing, clean code, and agile practices.

## TECHNOLOGIES AND LANGUAGES

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- **Languages & Frameworks:** Java, Spring Boot, Spring MVC, JavaScript/TypeScript, React, Node.js, Python, Rust
- **Architecture & APIs:** REST APIs, Microservices, Distributed Systems, Event-Driven Architecture, Asynchronous Messaging, High-Concurrency Systems, WebSockets, API Design, Design Patterns, Fault Tolerance, Resilience, Idempotency & Consistency
- **Cloud & DevOps:** AWS (ECS/Fargate, EKS, Elastic Beanstalk, RDS, DynamoDB, Athena, Lambda, SQS, EventBridge, Firehose, IAM, CloudWatch, S3), Docker, Kubernetes/EKS, CI/CD, Deployment Automation, Observability & Monitoring
- **Data & Databases:** PostgreSQL, MySQL, MariaDB, Redis, DynamoDB, Database Design & Evolution, Relational Modeling, Query Optimization, S3/Parquet Data Lakes, Athena
- **Engineering Practices:** Clean Code, Automated Testing, Code Reviews, Design Reviews, Agile/Scrum/Kanban, Technical Documentation, Incident Response, Root-Cause Analysis, Performance Optimization, Scalability Testing, Mentoring, AI-assisted Development, AI Code Agents
- **Domains:** SaaS Platforms, B2B/ERP Integrations, Payment Systems, Billing Flows, IoT/Real-Time Systems, Cloud-Native Backend Services, Cost Optimization

## EDUCATION

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- **B.Sc. Software Engineer**, Católica SC. 2024 – Present
- **Technical High School Diploma in Systems Development**, SENAI 2021 - 2023

## CERTIFICATIONS

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- **CCNA: Introduction to Networks** — Cisco

## LANGUAGES

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- **English:** Advanced (C1)
- **Portuguese:** Native