OSKAR ORTIZ

Software Engineer | Java, Spring Boot, Python, FastAPI | AWS | Applied AI: RAG, LLM, pgvector, vector search

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PROFESSIONAL PROFILE

Software engineer focused on backend development and cloud architecture on AWS. I build REST APIs and data-heavy services with Java/Spring Boot and Python/FastAPI, backed by PostgreSQL and containerized with Docker. On the infrastructure side I design VPCs with public and private subnets, load-balanced and auto-scaling compute, managed databases with read replicas and serverless pipelines with Lambda, SQS and SES, with observability in CloudWatch. Most recently I designed the architecture and backend of CuyiElite, a decision-support platform for cuy producers developed with SENA's Centro Agropecuario Lope, combining offline-first synchronization, a PostgreSQL + pgvector data model, a Random Forest classifier and a RAG engine with LLM. I also build data pipelines with Python, Pandas and PySpark. Open to remote backend and cloud engineering roles.

TECHNICAL SKILLS

- Languages: Java, Python, SQL, object-oriented programming, exception handling and design patterns.
- Backend: Spring Boot, FastAPI, REST APIs, JPA/Hibernate, DTOs, MapStruct, validation and layered architecture.
- Databases: PostgreSQL, pgvector, MySQL, Amazon RDS and SQLite.
- Cloud and infrastructure: AWS VPC, public and private subnets, routing, Internet Gateway, NAT Gateway, EC2, Application Load Balancer, Auto Scaling, Lambda, RDS, SES, IAM, Security Groups and CloudWatch.
- DevOps and automation: Docker, Dockerfile, multi-stage builds, volumes, networks, Maven, Nginx, PowerShell, AWS CLI, Git and Git Flow.
- Data and AI: Pandas, PySpark, Selenium, ETL, exploratory data analysis, Power BI, Power Query, DAX, Random Forest, RAG, LLM, pgvector, Ollama and applied AI assistants.
- Frontend and tools: React, Next.js, Ionic, Jira, Azure DevOps, SonarQube, Figma, Balsamiq and UML.

PROFESSIONAL EXPERIENCE

Backend Developer - Stealth Startup

Jul 2025 - Jan 2026 | Remote | Full-time | Confidential

- Delivered backend development for a confidential client under NDA, working remotely with a distributed engineering team.
- Built and maintained REST APIs with Java/Spring Boot and Python/FastAPI over PostgreSQL.
- Containerized services with Docker and deployed workloads on AWS.
- Reference available upon request.

SELECTED PROJECTS

CuyiElite - Independent Project

Technologies: FastAPI, PostgreSQL, pgvector, Ionic, React, Random Forest, RAG, LLM

- Designed and built a decision-support system aimed at reducing mortality in cuy production, leading the backend architecture and the data model.
- Modeled a layered, offline-first architecture with local storage and differential synchronization for intermittent rural connectivity.
- Built a RAG engine with LLM over SENA technical manuals using pgvector semantic retrieval, plus a Random Forest classifier for breeding-sire selection, and validated the system in the field with producers at Centro Agropecuario Lope del SENA.

University Enrollment System on AWS

Technologies: *AWS, VPC, EC2, ALB, Auto Scaling, RDS MySQL, Lambda, SES, IAM, CloudWatch, Python, Next.js, React, Nginx*

- Designed and deployed a distributed, scalable web application with layered architecture, public and private networks, traffic balancing and Auto Scaling.
- Configured high availability and database replication with RDS, plus an email microservice using Lambda and SES.
- Monitored the architecture with CloudWatch and configured AWS networking and security components.

Enrollment Deployment Automation

Technologies: *PowerShell, AWS CLI, JSON*

- Automated and validated deployment workflows with scripts for resource discovery, authentication checks and permissions review.
- Documented deployment evidence and AWS resource configuration.

Hotel Management Backend

Technologies: *Java, Spring Boot, Maven, PostgreSQL, JPA/Hibernate, REST, DTO, MapStruct*

- Implemented an object-oriented backend for customers, reservations, availability, prices, discounts, payments and notifications.
- Organized the solution with layered architecture, DTOs, MapStruct, validation and exception handling.
- Wrote unit tests for core application components.

Climate Data ETL Analysis

Technologies: *Python, Selenium, Pandas, SQLite, PySpark*

- Automated the download and validation of climate datasets and registered extraction activity.
- Cleaned and transformed data for SQLite storage and downstream processing.

EDUCATION

Software Engineering - Universidad Cooperativa de Colombia, Pasto | Sixth semester in progress | Expected graduation: late 2027

CERTIFICATIONS

- Advanced Data Analysis Bootcamp - Talento Tech Región 3, 159 hours, August 2024.
- Machine Learning: Practical Examples in Sustainability and General Use - IBM SkillsBuild, July 2026. Credential ID: URL-5114BCC72FE5.
- Getting Started with Cisco Packet Tracer - Cisco Networking Academy, August 2026. Credential ID: 0f11de27-65ad-4f03-836d-495d3d12d633.

LANGUAGES

Spanish (native) | English (technical: reading and comprehension of documentation)