



Backend, frontend, and the pipeline that puts them in production.

Java and Spring Boot behind the API, Vue 3 and TypeScript in front of it, and the CI/CD and infrastructure to deliver a feature without a hand-off. Two years on one production service estate and two GIS command-and-control applications.

JAVA 21

SPRING BOOT 3

TYPESCRIPT

VUE 3

REDIS

KUBERNETES

JENKINS

EXPERIENCE

may 2024 –
present
madrid

Software Engineer · ROSOL Technology

engineer since jun 2025 · intern from may 2024 · industrial, aviation and defence sectors

BACK END	At-least-once redelivery over Redis publish/subscribe: pending-event store, dead-letter queue, retry loop, STOMP acknowledgements, presence-aware routing, flush on reconnect. A geofencing service authored from scratch over a hand-written R-tree index.
FRONT END	Two GIS command-and-control applications in Vue 3, TypeScript and Pinia, shared ownership: a near-real-time collaborative map for planning, directing and coordinating field assets. Modular, so a client's requirements are configuration rather than a fork.
DELIVERY	Self-hosted CI/CD pipeline built with the team, carrying both applications from commit to client deployment. Real-time synchronisation flows, REST APIs and database optimisation across the estate.
ARCHITECTURE	The estate audited and refactored against the design patterns it claimed to follow, recording where the implementation held as precisely as where it fell short.

SELECTED PROJECT

msc thesis ·
owned hardware

Self-hosted continuous integration and delivery platform

Designed and built end to end: a single-node K3s cluster over Linux and BTRFS running Gitea, a private OCI registry, Vaultwarden and Jenkins through JCasC. Builds run in ephemeral pods, images build with Kaniko.

EDUCATION AND CREDENTIALS

current	MSc, Distributed and Embedded Systems Software — UPM. Thesis pending defence; core in consistency and coordination, messaging and fault tolerance.
2025	BSc, Computer Engineering — Universidad Politécnica de Madrid
also	Certified Scrum Master · Spanish (native), English (fluent)

event delivery	The redelivery layer fire-and-forget transport lacks Redis publish/subscribe notification behind a generic event envelope, then an optional at-least-once path: a per-user PendingEventStore, an unacknowledged set, a dead-letter queue, a scheduled retry loop, a STOMP acknowledgement endpoint, presence-aware routing and flush-on-reconnect. The server-to-client hop is closed; the upstream hop stays at-most-once, which the design states rather than hides.
error contract	One request, traceable across every service RFC 7807 problem-detail responses keep stack traces off the API boundary; correlation IDs propagate through a OncePerRequestFilter into the SLF4J MDC, making one request traceable across every service's logs.
spatial evaluation	A geofencing engine written from scratch Created and principally authored. A soft-check / hard-check strategy over an R-tree index written by hand, its node-split policy behind a SplitStrategy interface. A read/write lock manager, ray-casting point-in-polygon tests, and Haversine distance corrected for latitude-dependent projection distortion.
front end	Command and control over a live map A TypeScript single-page application on Vue 3 and Pinia, pseudo-real-time and multi-user, with collaborative editing. Operators track assets and facilities on a live map and run the procedures that plan, direct and coordinate an operation.
thesis platform	Storage and network decisions behind the pipeline Statically provisioned volumes with a retain reclaim policy keep storage paths deterministic, so migration to new hardware is a directory copy. Readiness probes with per-component progress deadlines handle failure detection and rollback. The network layers VLAN segmentation, a perimeter IDS, wildcard TLS through ACME DNS-01, split-horizon DNS and WireGuard-only access.
writing	A concepts reference, checked against production A personal site and a concepts reference, each concept traced to its canonical source — Meyer, Fowler, the Gang of Four, Nygard, Richardson, the W3C — then tested against a real production estate. Seven verified against structural evidence; three marked absent and written as what to build next.

TECHNICAL SKILLS, IN FULL

LANGUAGES	java 17 and 21, typescript, javascript, sql
BACKEND	spring boot 3.x, spring data jpa and hibernate, spring security (oauth2 resource server, jwt), spring websocket and stomp, openfeign, mapstruct, liquibase-versioned schemas
DISTRIBUTED	event-driven messaging, redis publish/subscribe, at-least-once delivery, idempotent consumers, dead-letter queues, command-query separation, correlation-id tracing
FRONT END, DATA	vue 3 (composition api, script setup), pinia, vite, leaflet · mysql, redis, h2
DELIVERY, INFRA	jenkins shared libraries and jcasc, docker, k3s, sonarqube, jacoco, junit, vitest, git · linux, btrfs, wireguard, vlan segmentation, nginx