Rodrigo Amarilla

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Backend engineer who ships. I design, build and run REST APIs and microservices, and I take them to production on AWS with Terraform, Kubernetes and CI/CD. I have worked on a production B2B backend in Java and Spring Boot, and I build my own services in NestJS and FastAPI with real test suites and pipelines. I care about typed code, a schema before the endpoints, and infrastructure that can be redeployed without drama.

Core Competencies

- **Backend:** Java 25, Spring Boot 3.5, Spring Security, Node.js, TypeScript, NestJS, Fastify, Express, FastAPI (Python), REST APIs, OpenAPI 3.1, WebSocket
- **Cloud and infrastructure:** AWS (EC2, EKS, VPC, IAM, ECR, S3, Secrets Manager, SSM, CloudWatch, X-Ray, CloudTrail, AWS Config, SNS), Kubernetes, k3s, Terraform, Docker, Docker Compose, Ansible, Nginx
- **CI/CD:** GitHub Actions, GitHub OIDC with no long-lived credentials in the repo, multi-stage Docker images, remote deploy through SSM Run Command, self-hosted runners
- **Data:** PostgreSQL 15/16, MySQL, MongoDB, Redis, Prisma, Flyway, SQLAlchemy, Supabase, relational modelling and indexing
- **AI and data:** SGLang (XGrammar, RadixAttention), structured LLM extraction, Gemini, pandas, Cheerio
- **Testing and tooling:** TDD (JUnit 5, Mockito, pytest), integration and end-to-end testing, OpenSpec, Git, Linux, PowerShell

Professional Experience

Outlier AI — **Remote**
AI Output Quality Review — *2026*

- Reviewed and scored large language model responses for generative AI clients across five axes: quality, context, usefulness, veracity and potential for harm. In the Journal API project I build the same capability end to end: structured output validated against a schema, with prompt-injection defences.

NÓRDICO — **Formosa, Argentina / Remote**
Backend Engineer — *2026-07 - 2026-10*

- Built the authentication microservice in Java 25 and Spring Boot 3.5: unified login issuing JWT (HS256), refresh-token rotation, BCrypt cost 12, OAuth2 resource server, rate limiting, and role-based access control across five roles.
- Modelled the relational domain in PostgreSQL 15 with versioned Flyway migrations: orders, stock, equipment, rentals and visits with photographic evidence and traceability.
- Hardened the live API: mapped 4xx responses that were surfacing as 500, cut the order listing's date filter and closed-history payload, and fixed a listing that crashed on `lower(bytea)` in PostgreSQL.
- Owned the deployment path: multi-stage Docker images, healthcheck against the platform-assigned port, per-environment CORS, and Railway and Render manifests.
- Worked with Spec-Driven Development (OpenSpec): every module opens with a proposal, spec, design and task breakdown before code is written.
- Strict TDD with JUnit 5, Mockito, `@WebMvcTest`, security integration tests and H2; API documented with OpenAPI 3.1 and realtime updates over WebSocket.

Instituto Politécnico Formosa — **Formosa, Argentina**
Backend Developer (Professional Practice) — *2025*

- Three placements on client projects, with an average grade of 9.66 out of 10: backend development and deployment, data modelling and frontend integration.

Projects

- **Python, FastAPI, PostgreSQL, AWS, Terraform, Kubernetes, EKS, OpenTelemetry**
  Journal API - Cloud Engineering Capstone *2026-10*
  - Infrastructure as code with roughly 79 Terraform resources on AWS: VPC, ECR, four IAM roles, Secrets Manager, CloudWatch, CloudTrail and AWS Config. Credentials are seeded out of band and never land in the repository or the Terraform state.
  - Service identity of its own: a runtime role scoped to two exact ARNs, an explicit `Deny` on secret reads for the instance role, and an `ExternalId` bound to the pod's ServiceAccount.
  - Three production failures taken to root cause: a ConfigMap that updated without the process reading it (inode and the `..data` symlink swap), a Terraform plan proposing a production restart over a line-ending change, and an alarm that fired during its own investigation.
  - Pipeline in GitHub Actions authenticated with OIDC: testing and linting, build with the image tagged by the commit SHA, and a deploy verified against `/version`. Observability with ADOT and OpenTelemetry into X-Ray and CloudWatch, with alarms to SNS and a cost budget in AWS Budgets.
- **NestJS, TypeScript, Prisma, PostgreSQL, Redis, BullMQ, Docker**
  PostulaDo - Job Application API with AI analysis *2026*
  - NestJS backend organised in modules, with separation between domain, application and infrastructure, dependency inversion in the persistence layer, strict typing and DTO validation with class-validator.
  - JWT authentication with Passport, role guards and per-resource ownership checks; a global interceptor that strips the password field from every response, and model output validated against a schema.
  - Background work on BullMQ and Redis; an e2e suite against real PostgreSQL and Redis in Docker Compose, with GitHub Actions gating every merge.
- **Node.js, Express, MongoDB, Docker, Terraform, Ansible, Nginx, GitHub Actions**
  Multi-Container App - Containerised API *2026*
  - REST API containerised with infrastructure as code and a CI/CD pipeline on self-hosted runners.
- **TypeScript, Fastify, TypeBox, Prisma, PostgreSQL, Next.js, pnpm**
  Task Tracker - Full stack monorepo *2026*
  - pnpm monorepo with API, web and CLI sharing types, and frontend and backend deployed separately.

Education

- **University of Gran Rosario**
  BSc in Data Science *2026 - Present*
  Second term, in progress. Machine learning, reinforcement learning, research methods, and a scraping and data analysis project.
- **Instituto Politécnico Formosa** **Formosa, Argentina**
  Higher Technical Degree in Multiplatform Software Development *2022 - 2025*
  Overall average 8.60 and an average of 9.66 across three Professional Practice placements. Graduated 05/12/2025; diploma issued 20/03/2026.

Languages

- Spanish (Argentina) - native. English - B2, working proficiency.

Certifications

- Learn to Cloud - Cloud Engineering capstone (Journal API), completed 10/2026: AWS, Kubernetes, Terraform, secure CI/CD and observability.
- AWS Certified Developer - Associate - in progress.

References

- Available upon request.