

Pedro de Paula

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Skills

Rust: Tokio, Axum, Tower, tonic, SQLx, tracing, Criterion

Go: ConnectRPC, pgx, sqlc, pprof, OpenTelemetry

Systems & Data: PostgreSQL, Redis, Linux, Docker, Kubernetes, AWS, Azure

Additional Languages: Python, C++

Spoken Languages: Portuguese (Native), English (C2, EF SET), German/French/Spanish (B1)

Experience

Freelance Software Engineer, Independent Nov 2025 – July 2026

- Engineered Go/gRPC services using errgroup.WithContext, pgx/sqlc, and cancellation-aware I/O.
- Built async Rust APIs with Tokio task cancellation, Axum, and composable Tower middleware.
- Implemented transactional outbox delivery with idempotency keys and retry-safe processing.
- Instrumented services with OpenTelemetry tracing, Prometheus metrics, and Grafana dashboards.
- Reduced API p95 latency from 87ms to 35ms via OpenTelemetry traces and PostgreSQL query tuning.

IT Apprentice, CD2 Equipamentos Industriais Jan 2025 – Dec 2025

- Built Django ORM/psycopg workflows for inventory, HR, and finance on Amazon RDS for PostgreSQL.
- Integrated TOTVS Protheus data using PostgreSQL COPY, staging tables, and ON CONFLICT UPSERTs.
- Serialized stock movements via SELECT ... FOR UPDATE and transaction-scoped writes.
- Profiled ERP workloads with pg_stat_statements and EXPLAIN (ANALYZE, BUFFERS).
- Automated payroll workflows, saving 15+ hours/month through validated SQL transformations.

Logistics Apprentice, IT Focus — Orange Alimentos Jan 2024 – Dec 2024

- Developed Python logistics services backed by Azure Database for PostgreSQL Flexible Server.
- Automated material approvals with Power Apps and watermark-based incremental ETL.
- Enforced CHECK/UNIQUE/FK constraints and SAVEPOINT/ROLLBACK in stock transactions.
- Analyzed Query Store wait statistics and configured PgBouncer transaction pooling.
- Built watermark ETL for Azure Database for PostgreSQL Flexible Server, syncing 600k+ rows/day.

Projects

OpenAuth | Go, OpenID Connect, OAuth 2.0, PostgreSQL/Redis projs.depaula.tech/openauth

- Built an OIDC/OAuth 2.0 identity server in Go with PKCE S256, JWKS, MFA, and tenant-aware sessions.
- Implemented refresh-token rotation, DPoP-bound tokens, and replay protection using PostgreSQL and Redis.
- Architected separate API/worker processes with a transactional outbox and concurrency-tested delivery.

TrackWay | Edge AI, Rust/C++, Python, Raspberry Pi, Linux projs.depaula.tech/trackway

- Developed an offline Raspberry Pi assistive system using quantized LLMs, YOLO, and voice interaction.
- Designed a separate hybrid prototype combining microcontrollers, ultrasonic sensors, and Gemini function calling.

StockHub | Power Apps, SharePoint, SQL, Power BI projs.depaula.tech/stockhub

- Built an inventory application used at SENAI (2024–2025) for material requests, stock tracking, and reports.
- Reached the penultimate round of SENAI's 2024 INOVA Nacional competition.

Education

Centro Universitário Barão de Mauá Expected Graduation: Dec 2029
B.Sc. in Computer Science

The Open University Expected Graduation: Dec 2030
Bachelor of Science (B.Sc.) (Honours) in Mathematics and Physics

SENAI São Paulo – Technical Program in Information Technology Dec 2025

SENAI São Paulo – Technical Program in Logistics Dec 2024