

William Ferreira

Senior Software Developer

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PROFILE

Senior backend developer with 7 years across fintech, lawtech, and media. Currently Senior Backend Developer at Grafiniti, a US-based finance analytics startup, where I design long-running AI agents for finance workflows, integrate LLM tooling and MCP servers into production, and ship full products end-to-end as sole author, from data models and permissions through to the UI.

TECHNICAL SKILLS

Languages: Java, Python, TypeScript, JavaScript, Go, Bash, Lua

Backend / Frameworks: Spring Boot, Flask, SQLAlchemy, Spark Java, Javalin, Quarkus, NestJS, Express.js

Frontend: React, Next.js, SvelteKit, tRPC, Tailwind, HTMX, Astro

AI & LLM: LangGraph, Langfuse, Anthropic API, Gemini API, Model Context Protocol (MCP), natural-language SQL generation, prompt engineering

Cloud & Infra: AWS (EC2, S3, SES, ECS, RDS, Lambda, IAM), GCP, Docker, nginx, Cloudflare, DigitalOcean, Vercel, Coolify, Doppler, Stripe

Data: PostgreSQL, MySQL, SQLite, DuckDB, Redis, Prisma, JDBI, Alembic, Flyway, Lucene, full-text search

Tools: Linux, Git, SSH, tmux, Gradle, Maven, Poetry, JUnit, Mockito, OpenAPI 3.0, ffmpeg

WORK EXPERIENCE

Senior Backend Developer | Grafiniti (Finance Analytics)

Nov 2024 – Present

Remote • grafiniti.com

- Built long-running, queue-driven AI agents, one that identifies underperforming funds as candidates for ETF conversion, another one that generates DAPs (distribution action plans) for a particular fund. The frontend enqueues analysis requests; the agent polls the queue and runs RAG-backed, multi-step reasoning over fund data, persisting state across extended runs.
- Built an AI-powered natural-language query tool and an LLM-backed tailored fund-list generator; built a Model Context Protocol (MCP) server exposing platform data to internal AI agents with OAuth and cross-service routing.
- Designed a unified resource-sharing and permission layer across multiple product surfaces, with access at user, team, and org levels, plus expiration policies and audit logs.
- Built a major reporting and data-composition feature end-to-end, from data models and APIs through to a multi-step report builder and public sharing.
- Optimised heavy analytics queries with targeted indexes, planner statistics, and a batched recalculation flow resilient to dead processes.
- Built a separate Next.js product end-to-end as sole author (SSO from the main app, S3-hosted assets, RBAC), and the internal admin portal covering organisation onboarding, multi-tenant access management, and operational dashboards.
- Designed the multi-tenancy and permission model alongside the CTO, including a substantial refactor of the org-membership layer.

Stack: Python, Flask, SQLAlchemy, pytest, boto3, AWS, GCP, DuckDB, Auth0, Coolify, MCP, Anthropic, Gemini, LangGraph, Next.js, React, TypeScript, Tailwind, OpenAPI 3.0

Senior Software Developer | Saco Cheio TV (Podcasting Platform)

Jun 2023 – Sep 2025

Remote • sacochείο.tv • *Weekend part-time from Nov 2024*

- Rebuilt main site and admin dashboard from React/Express to SvelteKit, modernising frontend performance and reducing memory usage by 70%.
- Automated migration of media hosting to a video CDN via custom Python scripts, eliminating buffering issues responsible for ~70% of support tickets.
- Deployed Owncast on DigitalOcean for HLS live streams, cutting streaming costs by 66% while gaining full operational control.
- Integrated Stripe subscription flows and designed a pay-per-view system, almost doubling paid conversions and opening new monetisation channels.
- Refactored an Express.js microservice (RSS feeds + payment webhooks) into Java 21 with Javalin; added live chat and real-time viewer counts using Quarkus.
- Migrated primary database to PlanetScale with primary/read replicas, cutting query latency by 90%.

Stack: SvelteKit, Svelte 5, React, Next.js, Java 21, Javalin, Quarkus, Go, Python, Prisma, Tailwind, tRPC, MySQL, PlanetScale, Cloudflare, BunnyCDN, MUX, Owncast, ffmpeg, nginx, Caddy

Software Developer | Lithium Software (Staffing / Contract)

Oct 2022 – Jun 2024

Remote • [lithiumsoft.com](#)

- **Virtual Therapy App:** built a full-text search feature with Hibernate Search 6 (Lucene) in a Spring Boot/Axon event-driven backend; implemented multi-tenant security with Spring Security + Auth0; built admin reporting for usage metrics; enhanced anonymous group chat with WebSockets.
- **Lighting Network Management (OpenWRT fork):** extended LuCI (Lua) backend for a custom web interface; scripted Bash/Lua daemons and cronjobs on embedded devices; designed a novel Layer 2 communication protocol using Scapy for streamlined device discovery and network adoption.

Stack: Java 17, Spring Boot, Axon, Hibernate Search 6, Auth0, Azure, React, TypeScript, Lua, Bash, Python (Scapy), OpenWRT, LuCI, SQLite3, Docker

Backend Developer | Previdenciaria (LawTech / FinTech)

Jul 2021 – Sep 2022

Remote • [prev.app](#)

- Worked alongside the CEO to scope, design, and deliver new features in Java microservices on AWS, accelerating roadmap velocity.
- Engineered a generic benefit-calculation feature, enabling product launch 18 months ahead of schedule and beating competitors to market.
- Integrated PIX (Brazil's real-time payments system) into the proprietary payment gateway, streamlining transactions and improving user trust.
- Developed a regex-based PDF scraper to auto-extract benefit data, reducing manual entry by 90% and populating a centralised data lake.

Stack: Java 11, Spark Java, Google Guice, Docker, AWS (ECS, S3, RDS, Lambda), MySQL, Redis

Full-Stack Developer | Sinqia (FinTech)

Jul 2019 – Aug 2021

Florianópolis, Brazil • [sinqia.com.br](#)

- Implemented core logic for a generic electronic voting system and loan-eligibility calculations with DocuSign integration for electronic contract signing.
- Collaborated with actuaries to codify complex fee structures into the application, bridging finance and development teams; mentored two junior developers.
- Automated critical day-to-day processes, reducing manual task time for the key client account.

Stack: Java 8, Spring Boot, Angular 9, JSP, MySQL

OPEN-SOURCE & PERSONAL PROJECTS

thrustmaster-led-linux

Native Linux daemon for racing wheel RPM LEDs

Repository: <https://github.com/wKoja/thrustmaster-led-linux>

- Built a native Linux daemon that drives RPM LEDs on Thrustmaster racing wheels from live sim telemetry, with multi-hardware auto-detection across 8 wheel-base models — replacing proprietary, Windows-only tooling.
- Reverse-engineered the undocumented LED control protocol (64-byte HID reports over hidraw) by analysing the Windows driver stack with Ghidra.
- Built a real-time 60 Hz telemetry pipeline and integrated systemd/udev services for automatic device lifecycle management.

Stack: Python 3.11+, HID (hidraw), udev, systemd, Linux, Ghidra, mingw-w64, Bash

EDUCATION & LANGUAGES

Instituto Federal Catarinense (IFC) — Technical High School Diploma in Informatics, 2011–2014. Integrated programme combining standard secondary education with technical instruction in programming, algorithms, databases, computer networks, object-oriented analysis, introduction to systems security, and hardware fundamentals.

Languages: Portuguese (native) • English (fluent)