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Experience

Senior Software Engineer — TMC, Luxembourg

2023-Present

Deloitte (second mission)

- Developed Sirius - DAG Pipelines, a Python framework for data transformation leveraging metaprogramming, enabling rapid creation of custom data flows for Deloitte's top 10 institutional clients and reducing documentation workload through automated introspective documentation.
- Built a declarative DSL for decision trees, empowering non-engineers to update client logic and significantly accelerating iteration times.
- Delivered a VS Code extension featuring live diagrams, code actions, and an integrated suite of CLI tools with an intuitive user interface, significantly reducing onboarding barriers for non-technical users.
- Established a robust testing strategy, implementing comprehensive unit tests and snapshot testing to ensure code reliability and prevent regressions across framework updates.

Bank of Luxembourg Investments (BLI)

- Automated manual, error-prone processes, saving 100+ hours per quarter and cutting human error rate by 95%.
- Developed a file-based querying system with indexing and cache, boosting internal data retrieval speed, enabling real time replies to client inquiries.
- Built PDF mining and analysis tools, facilitating compliance with regulatory requirements.
- Created a suite of internal web tools (e.g., Excel formula formatter) to speed up daily workflows.

Internal TMC Projects

- Built a web app to convert unstructured CVs into TMC's standardized format, reducing onboarding time for new clients by >6x.
- Developed GenAI-driven meeting note system, saving 15 minutes per meeting for all team members.

Deloitte (first mission)

- Engineered Stelar, a Python library to enrich investment portfolios with Duration and SCR (Solvency Capital Requirements), improving previous performance by 500%.
- Made significant contributions to a shared commons tools repository, enabling code reusability and accelerating development across all Deloitte engineering teams.
- Implemented a Python ETL toolkit that enables intuitive, configuration-driven data mapping between sources and destinations, supporting both YAML and Excel-based specs to streamline and simplify data transformation processes.
- Integrated robust CI/CD and built-in test suites, preventing regressions and raising software quality.

Business Intelligence & Software Engineer — Amazon, Luxembourg

2022

- Launched the first ML forecasting solution for my team's $60M+ operational plan at Amazon, moving from zero forecasting to automated, data-driven decision-making.
- Built new KPI tracking/warehousing tools, improving reporting speed and reliability for multiple teams.
- Spearheaded engineering initiatives that increased velocity and data quality.

Full-Stack Software Engineer — Vector ITC Group / Santander Bank, Spain

2019

- Developed and deployed mobile app modules for Santander Bank, focusing on high user adoption and strong performance.
- Built secure backend systems supporting rapid development in a Scrum team.

Personal Projects

- **Ionisium ↗**: Automated document distribution SaaS, used by leading Spanish film companies (e.g., CaballoFilms); personalized, watermarked delivery at scale.
- **isbtchot ↗**: Real-time Bitcoin macro analysis dashboard, providing actionable signals to dozens of users.
- **Software Catalog (SOCA) ↗**: CLI tool for automated creation of software catalogs from organization URLs, adopted by open source projects.

Education

Computer Engineering
Universidad Politécnica de Madrid Erasmus+, Aalto University (Finland)
Key focus: Algorithms, Operating Systems, Declarative Programming

Business Administration and Management
Universidad Politécnica de Madrid Completed full program in 4 years (vs. standard 5)

Achievements

- **Hackathon (BEST/AXA):** 1st place, 12 teams (2021)
- **CTF (Incibe):** 1st place, 10 teams (2016)

Technical Skills

- **Languages:** Python (expert), Java, Kotlin, C, SQL, Bash
- **Data & ML:** Pandas, Polars, NumPy, scikit-learn, Keras, Data Warehousing
- **Web Development:** Django, HTMX, HTML, CSS, JavaScript, REST APIs
- **Cloud & DevOps:** AWS (Redshift, ECS, ECR, EC2, Lambda), Pulumi IaC, Docker, CI/CD, Git
- **Tools & Environment:** Unix/Linux, Jupyter, VS Code, Vim Motions
- **Methodologies:** Agile (Scrum), Continuous Integration, TDD
- **Languages:** English (fluent), Spanish (native)

Other Experience

IT Teacher — Fundación Alas, Spain (2017-2019)
Trained 15+ elderly/disabled adults in IT fundamentals, adapting to individual learning needs.