

Backend Engineering Specialist (Python) | Mentor and Software Craftsman

Elixir/Gleam Enthusiast

Seasoned **Python** specialist with 15+ years of experience designing robust backend systems across **AI/ML** platforms, financial services, and SaaS products. I bridge **DevOps**, databases, and architecture while maintaining deep Python expertise, prioritizing craftsmanship and elegant solutions in every project—from SOC2-compliant platforms to containerized AI workloads.

A functional programming enthusiast exploring **Elixir** and **Gleam**, I apply these paradigms to write safer Python code while thriving in technically complex environments. Whether modernizing legacy systems at Santander or optimizing deployment pipelines at Origen, I excel where precision and cross-disciplinary collaboration are essential.

Beyond implementation, I mentor engineers in Python best practices and functional programming principles. My articles explore how these languages transform software design approaches. I'm passionate about creating thoughtfully crafted systems with long-term maintainability.



Andres Monge



My flow state emerges when crafting elegant systems with comprehensive test coverage - that sweet spot where technical precision meets creative problem-solving. I thrive most when fully immersed in documenting my solutions, optimizing code or refining features.

Work Style

Code Quality Champion: Prioritize clean, maintainable code through rigorous code reviews and documentation standards, ensuring long-term project sustainability.

Iterative Architect: Balance immediate business needs with long-term technical vision through phased implementation strategies and evolutionary design patterns.

Documentation Advocate: Treat technical documentation as first-class engineering artifacts, creating living documents that streamline onboarding and knowledge sharing.

Cross-Disciplinary Translator: Excel at bridging technical and non-technical domains through clear communication of complex concepts to diverse stakeholders.

Continuous Learner: Maintain a structured approach to skill development through targeted reading groups, technical workshops, and open-source contributions.

Experience Highlights

My journey as a software professional began with a passion for solving **complex problems** and a drive to continuously learn. From early days as a **web developer** to my current role as a seasoned **backend engineer**, I've evolved through diverse experiences that have shaped my expertise in **technical leadership**, **system design**, and **cross-functional collaboration**. This growth has been marked by a transition from building **enterprise web applications** to architecting **scalable AI platforms**, with a focus on **mentorship** and **technical excellence** throughout my career.

AI Platform Architect: Led Origen's Proteus platform evolution using FastAPI microservices, achieving SOC2 compliance and strict client isolation via Kubernetes namespaces. Collaborated with data scientists to integrate AI models into production-ready services.

Legacy Modernization Expert: Transformed GSG's banking systems using functional programming, reducing operational costs by €500/week and system downtime by 35%. Established technical standards for stability during transitions.

Testing Evangelist: Implemented CI/CD testing at Origen, decreasing deployment failures by 65%, and maintained 90%+ test coverage at Babio. Enabled confident refactoring and ensured system reliability.

Cross-Functional Leader: Managed international squads at Santander Global Tech, balancing compliance with API-first design, improving delivery predictability by 30%. Established MuleSoft and API-first standards.

Performance Optimizer: Developed BreezeFlow at Origen and optimized data pipelines at Delorian Group, reducing training time by 40%. Improved system performance and efficiency significantly.

Mentorship and Leadership: Mentored junior engineers through code reviews and architecture discussions, fostering professional growth and technical excellence while maintaining high security standards.

Explore detailed project implementations and technical achievements in the experience sections below...

Backend Engineer

SENIOR PYTHON SOFTWARE ENGINEER | Origen (2024-2025)

Python, Kubernetes, Docker, FastAPI, PostgreSQL, CI/CD, Security Compliance, Mentoring

As backend development lead for the Platform team, I guided the evolution of Proteus, Origen's client-facing AI platform. My days involved collaborating with data scientists to translate AI models into production-ready services, architecting workflow systems that balanced performance with reliability, and ensuring our multi-tenant infrastructure maintained strict client isolation.

- Secured SOC2 compliance certification for the core platform
- Upgraded AI platform from Python 3.7 to 3.12
- Developed BreezeFlow, a lightweight Airflow for AI pod management
- Decreased deployment failures by 65% through enhanced testing protocols
- Implemented complete client isolation using Kubernetes namespaces

Personal Growth:

- Mastered sophisticated Kubernetes patterns specific to AI workloads
- Developed fluency in translating between data science and engineering terminology
- Enhanced ability to communicate technical constraints to non-technical stakeholders

SENIOR PYTHON SOFTWARE ENGINEER | Babio (2023-2024)

Python, FastAPI, Pydantic, MongoDB, Docker, Cross-functional Leadership, Technical Mentoring

As project lead for Babio's solar proposal system, I architected and developed software that transformed the company's proposal generation process. Each day involved integrating complex data sources into a cohesive system that automatically generated tailored installation plans.

- Built complete system architecture using Python, MongoDB, and Docker
- Reduced proposal generation time by 70% through automated processing
- Designed scalable architecture handling 3x user load increase
- Achieved 90% test coverage ensuring exceptional system reliability

Personal Growth:

- Mastered modern Python web frameworks and API design patterns
- Enhanced ability to translate business requirements into technical specifications
- Strengthened cross-functional leadership skills

MACHINE LEARNING ENGINEER | Delorian Group (2023-2023)

Python, PyTorch, Transformers, CNN Architecture, Data Preprocessing, Independent Project Management

As the sole developer for this three-month AI project, I independently built a landmark recognition system from the ground up. Managed the entire ML lifecycle while ensuring seamless integration with existing tourism systems.

- Developed CNN model with 83% accuracy in landmark identification
- Optimized model inference time by 40% through architecture improvements
- Created reusable data preprocessing pipeline reducing training time by 40%
- Delivered complete end-to-end solution enhancing tourism offerings

Personal Growth:

- Expanded Python expertise into specialized AI/ML applications
- Developed deeper understanding of ML infrastructure requirements
- Strengthened independent project management skills

ENGINEERING MANAGER | Lavanda (2022-2023)

Agile/Scrum methodologies, Jira, Git workflow management, Team Leadership, Strategic Planning

Led two cross-functional engineering squads (10 developers) through product evolution phases, focusing on customer retention initiatives and technical debt management while bridging technical and business priorities.

- Reduced customer churn by 18% through strategic feature implementation
- Created technical documentation system adopted company-wide
- Decreased sprint planning time by 40% through process refinements

Personal Growth:

- Developed nuanced perspective on balancing technical excellence with business outcomes
- Deepened appreciation for documentation as engineering craftsmanship
- Refined approach to nurturing technical talent through individualized plans

Frontend Engineer

TECHNICAL LEAD | Global Savings Group (2021-2022)

JavaScript (ES6+), NodeJS, Python, Docker, Functional Programming, Team Leadership, Legacy Modernization

Guided cross-functional team through legacy system modernization while maintaining critical banking services. Established technical standards and code review processes ensuring stability during transitions.

- Designed NodeJS web-crawler saving €500/week through FP principles
- Reduced system downtime 35% via proactive monitoring solutions
- Refactored critical components for 25% performance improvement
- Established coding standards cutting bug reports by 30%

Personal Growth:

- Mastered FP principles for efficient data processing
- Enhanced NodeJS expertise through pure functional implementations
- Developed techniques for technical debt/business balance

TECHNICAL LEAD | Santander Global Tech (2018-2021)

Angular, Python, Event-Driven Architecture, MuleSoft, API-first Design, International Leadership

Spearheaded modernization of banking backend services across Spain/US teams. Established MuleSoft and API-first patterns while ensuring compliance.

- Led 10 international engineering squads as promoted TECHNICAL LEAD
- Designed MyPage system & enterprise component library (10+ teams)
- Developed Python automation tools improving delivery predictability 30%

Personal Growth:

- Mastered large-scale distributed systems design
- Enhanced API-first/event-driven architecture expertise
- Strengthened international team leadership

PRINCIPAL FRONTEND ENGINEER | S|NGULAR/BBVA (2013-2017)

AngularJS, Polymer.js, ReactJS, Cordova, Component Architecture, Cross-platform Dev

Directed frontend development for BBVA banking projects, leading R&D efforts and technological transitions with banking-grade security.

- Co-designed TabletBanking app (BBVA global standard)
- Mentored 3 junior developers to career advancement
- Created 200+ Polymer.js components using TDD

Personal Growth:

- Mastered cross-platform enterprise architecture
- Implemented TDD methodologies
- Developed FP principles for maintainability

FRONTEND ENGINEER | GFT (2012-2013)

NodeJS, AngularJS, CSS, Bash/Python, Component Development

Developed enterprise frontend solutions for insurance sector, mentoring teams through jQuery to Angular transition.

- Built personal finance manager in 6 weeks
- Created Mapfre Component Catalogue
- Developed Angular/ReactJS hybrid component

Personal Growth:

- Refined mentoring through framework transitions
- Deepened component architecture expertise
- Strengthened reusable component development

Web Developer

WEB DEVELOPER | C.B.I. (2010-2012)

SQL, PHP, JavaScript, WordPress, jQuery, Database Optimization, Enterprise Applications

Focused on backend development using SQL functions with PHP connecting database operations to JavaScript frontends. Contributed to enterprise CRM-like application supporting core business operations while maintaining proprietary frameworks.

- Developed components for enterprise-grade application similar to SAP
- Reduced database query execution time by 35% through SQL optimization
- Implemented caching strategies improving response time by 45%
- Ensured cross-browser compatibility including legacy IE7 support

Personal Growth:

- Developed expertise in relational database operations
- Discovered functional programming concepts through SQL
- Built foundation for backend specialization

WEB DEVELOPER (Freelance) | Madrid, Spain (2008-2013)

PHP, Vanilla JavaScript, Joomla, WordPress, Drupal, Full-stack Development, Client Management

Designed custom websites for international clients, managing full development lifecycle from consultation to deployment. Created optimized themes/plugins and maintained cross-platform compatibility.

- Developed Universidad Rey Juan Carlos website (www.urjc.es)
- Created Los Hijos de la Malinche cultural platform
- Delivered 10+ websites with 100% client satisfaction
- Improved site loading times by 40% through theme optimization

Personal Growth:

- Gained holistic perspective on web application lifecycles
- Enhanced client communication with diverse stakeholders
- Strengthened independent problem-solving abilities

WEB DEVELOPER INTERN | Know-Century (2007-2008)

HTML, PHP, CSS, JavaScript, CMS, SEO

Initiated as web developer before establishing company's SEO department. Optimized digital assets and coordinated technical/content teams for search performance.

- Created first formal SEO workflow and optimization process
- Achieved 2nd rank for "comprar oro" (competitive keyword)
- Developed comprehensive SEO style guide for content teams

Personal Growth:

- Discovered passion for technical problem-solving
- Understood frontend-data structure relationships
- Sparked interest in system architecture