

Mariano Majano Amaya

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Summary

AI-focused software engineer building backend and RAG-based analysis systems in Python and FastAPI. Experienced integrating LLM APIs, vector search, and deterministic logic to automate validation workflows, with measured reductions in review time and latency. Background includes government data systems, compliance tooling, and API development.

Technical Skills

Backend & Systems: Python, FastAPI, SQL, PostgreSQL, Docker, Git, REST APIs

AI Systems: LLM APIs (Gemini, OpenAI), RAG pipelines, vector search (FAISS), LangGraph, prompt orchestration

Frontend: React, Next.js, TypeScript

Infrastructure: AWS, Kubernetes, Redis, CI/CD, Linux

Supporting: JavaScript, Node.js, Django, Flask, MongoDB, Nginx

Experience

LegiGuard	May 2024 – Nov 2025
AI Engineer	Boston, MA
• Deployed compliance engine analyzing schemas and code, reducing manual review across automated pipelines.	
• Built Python/FastAPI RAG pipelines, boosting validation precision by 40% via optimized vector retrieval.	
• Reduced compliance latency by 70% by generating traceable, audit-ready evidence for regulators.	
• Combined deterministic static analysis with LLM reasoning into hybrid workflows to suppress false positives .	
City of Boston	Dec 2023 – May 2024
Data Analyst (Backend Focus)	Boston, MA
• Engineered a Flask API to unify fragmented municipal datasets for centralized analytics dashboards.	
• Boosted data ingestion throughput by 60% via multithreaded Python processing for complex geospatial data .	
• Optimized SQL/Pandas ETL pipelines handling 100K+ records, reducing reporting latency for policy analysis.	
Emmanuel Inc	Jan 2023 – Jun 2023
Developer	Boston, MA
• Developed Role-Based Access Control (RBAC) in Node.js with PostgreSQL to secure data for 50+ users .	
• Extended API and data models to support granular permissions, reducing authorization errors and access issues.	

Projects

NovaCRM – AI-Driven CRM Automation Platform <i>FastAPI, React, Vertex AI</i>	Deep Dive
• Designed LLM-assisted pipelines to generate CRM schemas, role mappings, and APIs from structured user input.	
• Implemented RAG-based document ingestion to convert PDFs into searchable bases for lead qualification.	
• Eliminated manual CRM configuration by automating schema and workflow generation.	
AskNova – LLM-Assisted Healthcare Triage System <i>Next.js, TypeScript, Gemini API, MongoDB</i>	Live Demo
• Built an LLM-assisted triage pipeline to transform 500+ patient cases into structured diagnostic prompts.	
• Orchestrated multi-step reasoning workflows using Gemini API and LangGraph to simulate differential diagnosis.	
• Enhanced output consistency by standardizing symptom extraction and prompt schemas.	
Additional Projects: Agent-based IoT orchestration system for smart home automation; multi-vendor e-commerce platform with Stripe integration and role-based approvals.	

Teaching Experience

Computer Systems Institute	Sep 2024 – Present
Programming Instructor (Full-Stack)	Boston, MA
• Mentored 40+ students in Python, JavaScript, and Django through hands-on Agile-style sprints.	
• Integrated Git, CI/CD , and secure development practices, enabling students to deploy apps by week 5.	

Education

Boston University	Boston, MA
<i>Bachelor of Science in Computer Science</i>	

Certifications

IBM	Feb 2025
<i>AI Developer Professional Certificate</i>	