Mauricio Pastora

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Work Experience

Software Engineer, Vertex Labs   **February 2025 - Present**

- Designed and implemented MCP servers and tools powering modular AI capabilities across Vinely.ai, enabling reusable, governed AI workflows.
- Built and deployed LLM-powered agents integrating tool-calling, structured outputs, and guardrails to deliver reliable, low-latency AI interactions.
- Developed RAG pipelines backed by vector databases, applying embedding deduplication and retrieval optimizations that reduced storage costs by 50% and improved response quality.
- Integrated third-party APIs and web-scraping pipelines with secure authentication, supporting scalable data ingestion for AI systems.
- Collaborated in an agile SDLC with frequent deployments, automated tests, code reviews, and production debugging in a containerized runtime.

Software Engineer, Client: IIJS   **February 2025 - Present**

- Architected and delivered Python (Flask) backend services integrated with a React/TypeScript frontend, supporting analytics and data access.
- Designed and deployed AWS-based infrastructure (EC2, RDS PostgreSQL, S3, Lambda, Cognito, CloudFront) following least-privilege IAM and production security best practices.
- Built CI/CD pipelines with automated tests, enabling safe iteration and deployment of backend services.
- Translated organizational and compliance-oriented requirements into data models, APIs, and system configurations, aligning with governance and reliability goals.

Software Engineer, Arborea   **June 2025 – Present**

- Leading the ongoing implementation of full-stack features, including building dynamic Next.js pages and components (e.g., a responsive map interface using the Google Maps API), secure authentication, and user profile management, and designing scalable SQL/DDL schema to ship production enhancements on rapid release cycles.
- Engaging in ongoing client meetings to define and prioritize MVP features, actively translating non-technical business needs into actionable technical deliverables, maintaining rapid feature implementation.
- Collaborating with a development team for version control, code reviews, and seamless integration of contributions.

Inter-American Institute on Justice and Sustainability, Business Dev. Associate   **September 2023 – February 2025**

- Leveraged Agile methodology and cloud based systems during development alongside Python, SQLite, Tkinter, and front-end design, to build a data warehouse business solution that streamlined access to client and expert data, cutting retrieval time by 70%.
- Managed comprehensive IT operations, including onboarding subcontractors, configuring access permissions, and collaborating closely with senior leadership to align IT solutions with organizational goals.
- Spearheaded marketing campaigns using analytics from social media, external communications, and website management, increasing digital engagement metrics by 30%.

Skills

Frontend

- React, Next.js, Typescript, Tailwind CSS, Vite, Component-Driven UI Development, API Integration

Backend

- Python, Flask, REST APIs PostgreSQL, SQLite3, SQL/Schema Design, Auth, Supabase

AI/LLM Systems

- Model Context Protocol (MCP), Retrieval-Augmented Generation (RAG) pipelines, Vector databases & embedding optimization

Cloud / DevOps

- Amazon Web Services (EC2, Lambda, S3, RDS, Cloudfront, Cognito), CI/CD, Nginx

Certifications

- Amazon Web Services |AWS Certified AI Practitioner

Education

Virginia Commonwealth University, *Richmond, VA*   **Graduated Spring 2023**

    B.S. Marketing