Mauricio Pastora

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Work Experience

Software Engineer, Arboria   **June 2025 - Present**

- Architecting AWS cloud infrastructure using Terraform to deploy containerized microservices on ECS Fargate, writing Dockerfiles and managing container registries (ECR), implementing CI/CD pipelines with GitHub Actions, and configuring VPC network policies, security groups, and auto-scaling compute resources (CPU/memory-based scaling) with bash scripting for automation.
- Leading the implementation of full-stack features for a logistics management application, including building dynamic Next.js pages and components (e.g., a responsive map interface using the Google Maps API), secure authentication, user profile management, and designing scalable PostgreSQL schemas to ship production enhancements on rapid release cycles.

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

- Designed and implemented MCP servers and tools powering modular AI capabilities across the Vinely.AI platform.
- Developing an AI powered browser called Surph.AI with ability to integrate MCP tools as company product.
- Leading the migration of a client's full AWS infrastructure between accounts, replicating services, transferring data and permissions, and validating deployments to ensure security, continuity, and minimal downtime.
- 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 a client data storage solution leveraging Python (Flask) backend services integrated with a React/TypeScript frontend.
- 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.

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, configured access permissions, and collaborated 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

- Javascript, Typescript, HTML, CSS, React, Next.js, Tailwind CSS, Vite, Electron.js

Backend

- Python, Java, Node.js, Flask, REST APIs, PostgreSQL, SQLite3, Supabase

AI/LLM Systems

- Model Context Protocol (MCP), Retrieval-Augmented Generation (RAG) pipelines, Vector databases (S3 vector buckets) & embedding optimization

Cloud/DevOps

- Amazon Web Services (EC2, Lambda, S3, RDS, Cloudfront, Cognito, Cloudwatch, ECS, NAT Gateway), CI/CD, Nginx, Terraform, Powershell, Cloudshell, Github Actions, Terraform (IaC)

Certifications

- Amazon Web Services |AWS Certified AI Practitioner

Education

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

  Bachelors of Science, Marketing