

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, Pytorch, Langchain, AWS Bedrock

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
Bachelors of Science, Marketing

Graduated Spring 2023