

ADAM CROCKER

AI Cloud Engineer · Data Platform Lead · AWS Solutions Architect – Professional

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PROFESSIONAL SUMMARY

AWS Solutions Architect – Professional and full-stack engineer building AI-native systems across aviation, energy, and small-business sectors. Lead engineer on Diversified Gas & Oil's OT data platform, industrial ML pipeline, and field-operations mobile app. Selected for Delta Air Lines' AI Enablement team to develop AI agent standards and package reusable AI tooling for organization-wide standardization across Operations Planning & Performance. Founder of an AI-native consultancy architecting autonomous agent systems with multi-model orchestration. Track record of moving from bootcamp graduate to production data engineer at a Fortune 500 in under two years.

SELECTED HIGHLIGHTS

- **Selected for Delta's AI Enablement team (June 2026)** to develop AI agent standards and package reusable AI tooling for organization-wide standardization across Operations Planning & Performance.
- **AWS Certified Solutions Architect – Professional** (issued January 2025, valid through January 2028) — AWS's highest-tier architect credential.
- **Lead engineer on Diversified's OT data platform** — TimescaleDB warehouse processing 1.6M+ daily production records, with 114 PL/pgSQL functions and embedded pgai for in-Postgres LLM workflows over operator field data.
- **Architecting autonomous AI agency platform** at That Simple Tech LLC — multi-model orchestration (Qwen, MiniMax, Claude) with voice/telephony stack via Pipecat + Telnyx + Deepgram for full client-lifecycle automation.

PROFESSIONAL EXPERIENCE

DELTA AIR LINES · Atlanta, GA · Nov 2021 – Present

AI Enablement Team — Operations Planning & Performance · Effective June 2026 [INCOMING]

- **Selected as one of two engineers on a 3-person team (manager + 2 directs, plus co-ops)** developing AI agent standards, workflows, and reusable patterns across Operations Planning & Performance — Delta's organization covering crew planning, fleet planning, network operations, schedule planning, and operations control.
- **Packaging AI tools for organization-wide standardization** — building reusable, distributable tooling that other OPP teams can adopt for production AI agent deployments.
- **Focus areas:** guardrails, evaluation frameworks, and deployment patterns for production AI agents in mission-critical airline systems.

Data Engineer — Operations Strategy Reporting (ODSR) · Aug 2023 – June 2026

- **Finance KPI Year-End Forecast:** Architected blending logic in the ODSR scorecard ETL combining completed-month actuals with remaining-month forecasts. Resolved a circular dependency between actuals and forecast data and integrated SharePoint-hosted finance data. Processes 178,000+ rows across 12 finance KPIs (LBR_PREM_PCT, COS_BH, MRO_MARGIN, TOT_COST, others). Delivered under a compressed MPR deadline.
- **Teradata & Python ETL ownership:** Own and maintain core Python ETL scripts (scrd_data_collection.py, scrd_rep_scorecard_kpi.py) populating zods_kpi.rep_scorecard_kpi. Optimize Teradata SQL views with spool-space management and author KPI master record views supporting all downstream scorecard reporting.

Associate Software Developer · Nov 2021 – Aug 2023

- **Executive AI Reporting System (POC):** Designed a real-time AWS analytics platform for executive dashboards with natural-language querying. Built ingestion and ETL pipelines using Kinesis, Lambda, and Glue with warehousing on Redshift and S3. Integrated Amazon Comprehend for NLP and SageMaker for AI modeling, delivered through QuickSight and an API Gateway + React frontend. Estimated 7 hours/week of analyst time saved per executive.

- **AWS Glue CI/CD pipeline:** Built a GitLab CI/CD pipeline for deploying AWS Glue jobs with S3 sync via AWS CLI, IAM roles for cross-account access, and build/test/deploy stages tailored for enterprise data engineering. Automated AWS STS credential refresh through PingFederate SSO for the corporate development environment.

DIVERSIFIED GAS & OIL · Remote · Aug 2025 – Present

Systems Engineer (Analyst – OT Apps)

- Individual contributor on a 5-person OT Applications team, owning the time-series data warehouse, ML platform, field-operations mobile app, and route-configuration system that move raw SCADA and operator telemetry into certified production, regulatory, and field-facing data across Diversified's gas and oil operations.
- **OT TimescaleDB Enterprise Data Platform (“Corporate Historian”):** Lead engineer on the central operational data warehouse — 15 schemas, 77 tables, 114 PL/pgSQL functions managing 1.6M+ daily production records. Designed the star-schema with effective-dated dimensions, hypertables, and continuous aggregates. Built ETL pipelines from CygNet SCADA, Snowflake, and MNR; outbound feeds to Grafana, regulatory reporting, and volume control. Embedded pgai with OpenAI / Anthropic / Cohere / Voyage integrations — shipped automated issue detection over operator free-text comments and semantic search across historical field observations.
- **Hybrid Database Migration CI/CD Pipeline:** Designed and shipped a 5-stage Azure DevOps pipeline on a self-hosted Windows agent that validates, classifies, approves, executes, and documents every schema change. Built a pattern-based SQL risk classifier (BLOCKED/HIGH/MEDIUM/LOW) over ~30 regex patterns, a DROP TABLE foreign-key safeguard, transactional execution with auto-rollback, git-based state tracking, and a nightly drift detector that auto-generates emergency-change documentation. Full SOX-aligned audit logging.
- **Historian ML Platform — Industrial Sensor Pattern & Anomaly Detection:** Designed and built a machine learning platform over 186M+ telemetry observations. Pattern-detection engine covers 8 categories of industrial sensor failures. ML suite: Isolation Forest for unsupervised anomaly detection, Random Forest for pattern classification, LSTM for sensor-level time-series forecasting, with automated feature engineering and S3 artifact persistence. Packaged cloud infrastructure as an AWS CDK stack (SageMaker, S3, IAM, Secrets Manager, CloudWatch) with a 580-line handoff runbook for the infrastructure team.
- **Field App — Mobile Inspection & Route Management:** Ionic 8 + Angular 20 + Capacitor app replacing paper-based tank inspections for field operators and foremen. Single codebase deploys as native iOS/Android and as an installable PWA. Offline-first architecture on Dexie/IndexedDB with master-data caching and a write-queue for user-generated content; sync service handles conflict resolution on reconnect. AWS Amplify backend with AppSync GraphQL, DynamoDB, and Cognito brokered with Azure AD via MSAL. Deployed to production; piloting with field operations.
- **FDC Route Management Tool:** Angular + AWS Amplify web app replacing an Enertia-driven route configuration process, giving business teams self-service, scoped route management. API Gateway + Node.js Lambda backend with TimescaleDB (fdc_config) as authoritative store for routes, stops, change sets, and audit log. Snowflake as integration boundary for asset master data (inbound) and nightly config snapshots (outbound to Data Forge). District-boundary rule enforcement, change-set model for future-state planning, Azure AD RBAC.
- **Geotab Telematics Integration:** Built a production vehicle telematics integration using Python 3.11 Lambdas (polling, batch trigger, validation) deployed via CloudFormation. Running ~1,320 invocations/day consistently. Automated credential management via Secrets Manager with scheduled rotation; shared core library published to S3 for versioned reuse across Lambdas.

THAT SIMPLE TECH (That Simple LLC, dba) · Springville, AL · 2023 – Present

Founder & Principal Engineer

- Founded an AI-native technology consultancy delivering websites, custom applications, IT infrastructure, AI automation, and cloud services to small and mid-sized businesses.
- **Autonomous AI Agency Platform:** Architecting a multi-agent system handling the full client lifecycle (intake → scoping → proposal → build → deploy → support → invoice). Stack: Qwen 3.6 Plus (orchestration), MiniMax M2.7 (execution), Pipecat (voice), Telnix (telephony), Deepgram (STT), Stripe (payments), Claude Code (agent harness). Targets a 15× reduction in per-project variable cost vs. a traditional Claude-API stack.
- **AWS-Native Serverless SEO/GEO Analyzer:** Designed and specified a production SEO monitoring and remediation service using Lambda, Step Functions, Fargate Spot, DynamoDB, EventBridge Scheduler, S3, Secrets Manager, and

SNS — deployed via CDK (TypeScript). Risk-tiered autonomous remediation, visual regression (pixelmatch), accessibility regression (axe-core), rollback manifest system. Total hosting cost: ~\$1.71/month.

- **AI Phone Assistant:** Built outbound call automation using AWS Connect, Bedrock (Claude), and Polly for AI-driven conversations. Added web scraping, data enrichment, and dynamic script generation. Multi-step flows orchestrated with Lambda and Step Functions; persistence in DynamoDB and S3. CloudWatch monitoring, opt-out handling, and call logging for compliance.
- **AI Website with Bedrock-Powered Chat:** Built a responsive business site with real-time AI chatbot using Bedrock and Claude Haiku, vector-based knowledge retrieval via OpenSearch Serverless and Titan Embeddings, and a serverless backend (Lambda + API Gateway). Frontend in SvelteKit 5 + Tailwind with Three.js graphics. SNS-based lead-gen automation, SEO optimization, and zero-downtime CI/CD via Amplify.
- **Self-Hosted AI Infrastructure (EZER):** Designed and operate a private AI and family-cloud platform on EPYC 9124 / Supermicro H13SSL-NT / 160 GB DDR5 ECC / 3× RTX 3090 + 1× RTX 3060 hardware, serving ~20 users across the US and Ecuador. Multi-GPU inference routing with vLLM covering voice (Qwen 3.5-Omni), agentic coding (Qwen 3 Coder), reasoning (DeepSeek-R1), embeddings (BGE-M3), and TTS (F5-TTS). Service stack: Docker Compose, Open WebUI, MCP servers, Tailscale mesh VPN, Nextcloud, Immich, Jellyfin, Vaultwarden, Home Assistant, Caddy, Grafana / Prometheus.

TECHNICAL SKILLS

AI / ML AI agent design & orchestration, MCP (Model Context Protocol), Claude API, AWS Bedrock (Claude, Titan, Knowledge Bases), OpenAI API, pgai, scikit-learn, TensorFlow / Keras, Isolation Forest, Random Forest, LSTM, anomaly detection, time-series forecasting, RAG pipelines, Pipecat, Deepgram, vLLM, Ollama, Qwen / MiniMax / DeepSeek / Gemma local inference

AWS Lambda, Step Functions, SageMaker, Amplify, AppSync, Cognito, API Gateway, S3, DynamoDB, Redshift, Glue, Bedrock, Kinesis, EventBridge Scheduler, Fargate (incl. Spot), Secrets Manager, SNS, CloudWatch, IAM, STS, KMS, OpenSearch Serverless, CDK (Python + TypeScript), CloudFormation, Connect, Polly, Comprehend

Data & ETL TimescaleDB Cloud (hypertables, continuous aggregates), PostgreSQL 14+, PL/pgSQL, Teradata, Snowflake, DynamoDB, Redis, pgvector, pgai, AWS Glue, Python ETL, Kinesis, CygNet SCADA, MNR, star-schema modeling, effective-dated dimensions, JSONB

Languages Python, SQL (Teradata, PostgreSQL, Snowflake), PL/pgSQL, TypeScript, JavaScript (Node.js), Bash, PowerShell, HTML / CSS

App Stack FastAPI, Node.js, GraphQL (AppSync), SQLAlchemy 2.0 (async), Pydantic, Alembic, Celery, OpenAPI / JSON Schema, React, SvelteKit 2 / Svelte 5, Angular 20, Ionic 8, Capacitor, Tailwind CSS, Three.js, Threlte, GSAP, Dexie / IndexedDB (offline-first), service workers / PWA

DevOps & Platform Azure DevOps Pipelines (multi-stage, approval gates), GitLab CI/CD, GitHub Actions, AWS CDK, Docker / Docker Compose, self-hosted build agents, git-based migration workflows, pattern-based SQL risk classification, SOX-aligned audit logging, Tailscale, Caddy, Grafana / Prometheus

Identity & Integrations Microsoft Entra ID / Azure AD, MSAL, AWS Cognito, PingFederate SSO, Stripe, Telnix, SharePoint, Google Search Console, GA4

EDUCATION & CERTIFICATIONS

AWS Certified Solutions Architect – Professional · Amazon Web Services · Issued January 2025 · Valid through January 2028

TrueCoders Full-Stack Software Engineering · Birmingham, AL · Completed July 2021