JAMES MENDENHALL

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PROFESSIONAL SUMMARY

Data Engineer & AI Integration Specialist with 12+ years of experience building automation, reconciliation, and compliance systems for enterprise and government clients (DFAS, Deloitte, AmEx, Accenture). Expert in Python, Databricks, and ACL automation. Currently developing production AI systems through hands-on implementation of Retrieval-Augmented Generation (RAG) pipelines, autonomous agents, and vector database architectures. Combines deep governance and data lineage expertise with emerging AI capabilities to deliver secure, compliant, observable automation solutions.

AI INTEGRATION & DEVELOPMENT (Jan 2025 – Present)

Live Projects: All three AI projects showcased at jamesmendenhall.dev

Personal AI Assistant – Production RAG with Langfuse Observability

- Built end-to-end RAG pipeline in Python using OpenAI API, Supabase (PostgreSQL + pgvector), and Langfuse for production observability and quality debugging.
- Implemented semantic search with vector embeddings, hybrid (keyword + semantic) filtering, and token streaming; deployed Flask API to Railway with live chatbot integration.

Markets Report AI Agent – Autonomous Daily Analysis

- Built fully autonomous AI agent analyzing traditional finance and cryptocurrency markets daily via GitHub Actions CI/CD.
- Orchestrates 4 data sources (Yahoo Finance, CoinGecko, Etherscan, NewsAPI) and generates personality-tuned HTML reports via OpenAI API.

Sneks – NFT Game with Blockchain Integration

- Developed interactive P5.js arcade game with Ethereum wallet verification and secure off-chain leaderboard via Python backend and Raspberry Pi automation (sneks.art).
- Demonstrates blockchain integration, creative problem-solving, and full-stack capabilities.

PROFESSIONAL EXPERIENCE

Senior Technical Analyst | eimagine (DFAS / Deloitte) – Feb 2018 – Present, Indianapolis, IN

- Engineered ACL automation shell used enterprise-wide for reconciliation, reducing build time by 90% and enabling team to handle 3x project volume.
- Designed Databricks ETL pipelines to cleanse, merge, and validate multi-million-row datasets for audit readiness; built data lineage and quality tracking systems.
- Built custom Excel/VBA tools for data lineage visualization, error tracking, and variance analysis adopted across teams; trained analysts on advanced workflows.
- Acted as primary technical liaison for data issues; authored detailed technical documentation and led onboarding workshops for new developers.
- Supported automation of case management data visualization using Python, ACL, and Databricks for improved compliance reporting.
- Recognized repeatedly for exceptional client service and technical expertise; contributed to contract growth by 6+ additional resources.

Anti-Money Laundering Analyst | American Express – May 2016 – Jul 2017, Phoenix, AZ

- Investigated AML and suspicious activity alerts across jurisdictions; drafted detailed reports for FinCEN submissions.
- Coordinated with compliance, legal, and international teams to resolve complex cases under tight deadlines.

Senior Compliance Analyst | Accenture (Facebook) – Jan 2015 – Apr 2016, Austin, TX

- Reviewed legal and content-abuse requests; liaised with federal, state, and international law enforcement.
- Standardized workflows and documentation for high-sensitivity compliance cases.

Cryptologic Technician | United States Navy – Feb 2011 – Sep 2013, Pensacola, FL

- Maintained and calibrated cryptologic equipment, ensuring continuous operational readiness and signal integrity.
- Translated and transcribed Spanish communications; provided intelligence support under mission-critical timelines.

TECHNICAL SKILLS

Data Engineering: Databricks, PySpark, ACL, SQL, Excel (VBA/macros), ETL Pipelines

Automation & Scripting: Python, GitHub Actions, Web APIs, CI/CD

AI Integration: RAG Systems, Vector Databases, OpenAI API, Embeddings, Function Calling, Langfuse (Observability & Tracing), Token Streaming

Tools: GitHub, PostgreSQL, Flask, Supabase, Excel, Databricks

Certifications: Salesforce Certified Administrator, Full Stack Web Development (Galvanize)

EDUCATION

Bachelor of Science in International Studies – Indiana University, Bloomington, IN

Certificate, Full Stack Web Development – Galvanize 6-Month Immersive, Denver, CO