

# 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. Proficient 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.

## 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 the 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.

## AI INTEGRATION & DEVELOPMENT (Jan 2025 -- Present)

*Live Projects:* All three AI projects showcased at [jamesmendenhall.dev](https://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 via OpenSea API; deployed on Base L2 with gas-free gameplay (sneks.art).
- Built Node.js backend on Render with PostgreSQL database for score validation and leaderboard management with bi-weekly prize competitions.
- Automated daily Twitter posts via Claude API and GitHub Actions; generates Aesop Rock-style captions from NFT metadata for continuous engagement.

## **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, Render, Node.js

## **EDUCATION**

**Bachelor of Science in International Studies** -- Indiana University, Bloomington, IN

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

## **CERTIFICATIONS**

### **Microsoft Certified: Azure AI Engineer Associate (AI-102)**

Completed comprehensive certification training covering Azure OpenAI Service, Azure AI Studio, Azure Cognitive Services, Azure Cognitive Search, Azure Bot Framework, and Responsible AI principles.