JOSEPH MCKENNA

Backend Engineer | Healthcare EDI Systems | AWS Event-Driven Architecture
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PROFESSIONAL SUMMARY

Senior backend engineer specializing in healthcare claims infrastructure and AWS event-driven systems. Designs and operates production-grade EDI (X12 837D/I/P) pipelines processing 2,000+ daily transactions. Led transition from offshore vendors to in-house architecture, reducing operational costs by ~$250K annually. Focused on reliability, fault tolerance, and scalable distributed systems.

TECHNICAL SKILLS

Languages: Python, SQL, JavaScript
Frameworks & Libraries: Django, Django REST Framework, React
Databases: PostgreSQL, DynamoDB, SQL Server
AWS: Lambda, SQS, Step Functions, SNS, S3, CloudWatch
Architecture: Event-driven systems, distributed processing, retry logic, duplicate handling, fault tolerance
Infrastructure: Terraform, Docker, Git
Healthcare & Data Standards: ANSI X12 (837D, 837I, 837P), EDI processing, OCR pipelines

PROFESSIONAL EXPERIENCE

Gainwell Technologies — Remote **May 2022 - Present**
Professional Application Designer

- Designed and deployed in-house EDI X12 (837D, 837I, 837P) transaction infrastructure, eliminating offshore dependency and reducing vendor spending by $250K annually and increasing internal system ownership.
- Built scalable AWS event-driven architecture (Lambda, SQS, Step Functions) processing 2,000+ healthcare claims daily with automated retries, idempotency controls, and fault-tolerant error handling.
- Architected OCR-to-EDI pipeline using AWS Textract to transform unstructured healthcare documents into compliant X12 transactions.
- Eliminated 30,000-document backlog by converting manual workflows into continuous, automated processing systems.
- Developed internal claims editing platform, increasing throughput and improving submission accuracy.
- Implemented centralized logging, monitoring, and alerting to reduce mean time to resolution (MTTR) for production incidents.
- Designed mapping and validation engines to ensure regulatory compliance and downstream system compatibility.

PROJECTS

22 to LIFE — Python, Django, React, AWS (Under Development)
Full-Stack Application | Veteran & First Responder Support Platform

- Designing full-stack platform supporting secure community interaction for veterans and first responders, focused on scalable user engagement and mental health resource integration.
- Architected backend services using Django REST framework to manage user authentication, profile management, secure messaging, and content moderation workflows.
- Built responsive frontend application using React, implementing dynamic state management, protected routes, and real-time user interaction features.
- Designed relational database schema to support user-generated content, community interactions, and scalable growth.
- Implemented role-based access controls and data validation to ensure secure handling of sensitive user information.
- Structured application to support future scalability, including potential integration with crisis resources, peer support matching, and external mental health services.

---------- **EDUCATION**----------

Master of Science — Artificial Intelligence & Machine Learning (In Progress) — Colorado State University Global
Bachelor of Science — Criminal Justice — Briarcliffe College
Full Stack Software Development Boot Camp — The Tech Academy