**Susan Maharjan**

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**Summary:**

Experienced Full Stack Developer with expertise in designing and developing scalable, high-performance applications across healthcare, finance, and banking industries. Skilled in Python, Angular, and cloud technologies (Azure & AWS), with a strong background in microservices architecture, AI-driven automation, and real-time data processing. Proficient in building secure and compliant solutions, ensuring adherence to HIPAA, PCI-DSS, and financial regulations. Strong knowledge of GraphQL, RESTful APIs, authentication mechanisms (OAuth 2.0, JWT, Azure AD B2C), and cloud security best practices. Hands-on experience in containerization (Docker, Kubernetes), infrastructure automation (Terraform, Bicep), CI/CD (Azure DevOps, GitHub Actions, Jenkins), and event-driven architectures (Kafka, Azure Event Grid, AWS SQS/SNS). Expertise in performance tuning, database optimization, predictive analytics (Azure Machine Learning, PyTorch, Scikit-Learn), and real-time monitoring (ELK Stack, Prometheus, Azure Monitor).

**Projects and Experiences:**

**Cardinal Health, Dublin, Ohio Mar 2023- May 2024**

**Senior Software Developer**

**Summary:** *Cardinal Health is a healthcare solutions provider aimed at optimizing pharmaceutical supply chain management, order fulfillment, and analytics while ensuring HIPAA compliance. The project involved developing microservices using Python and Azure, integrating AI-driven automation for medical document processing, and implementing predictive analytics for inventory optimization. It enhanced real-time order tracking with Angular, improved API performance with GraphQL, and ensured secure, scalable cloud deployments on Azure Kubernetes Service. The solution streamlined workflows, automated compliance tracking, and strengthened data security while maintaining high availability and regulatory adherence.*

**Responsibilities:**

* Designed and developed RESTful APIs using FastAPI and Django, optimizing performance and enabling seamless integration between healthcare inventory management, order fulfillment, and analytics dashboards.
* Implemented AI-driven automation workflows by integrating GPT-4 (via OpenAI API, LangChain, and Azure OpenAI Service) to enhance medical document processing, prescription analysis, and chatbot-driven support for healthcare professionals.
* Developed a microservices-based architecture deployed on Azure Kubernetes Service (AKS) with Helm charts, ensuring scalability, high availability, and efficient load balancing across healthcare services.
* Built dynamic front-end applications using Angular 14 with RxJS, NgRx state management, and Angular Material, delivering an intuitive and responsive UI for pharmacy management and real-time order tracking.
* Implemented role-based access control (RBAC) and authentication mechanisms using Azure AD B2C, OAuth 2.0, JWT, and MSAL, ensuring HIPAA-compliant security and access control for sensitive patient data.
* Integrated event-driven architecture using Azure Event Grid, Azure Service Bus, and Kafka, enabling real-time processing of order updates, prescription approvals, and supply chain logistics.
* Developed AI-powered predictive analytics models using Azure Machine Learning, PyTorch, and Scikit-Learn, improving demand forecasting and optimizing pharmaceutical inventory management.
* Optimized SQL and NoSQL database interactions, implementing indexing, partitioning, and caching strategies with PostgreSQL, Cosmos DB, and Redis, enhancing data retrieval efficiency for large-scale medical records.
* Created serverless functions using Azure Functions, automating critical workflows such as invoice generation, fraud detection in pharmaceutical transactions, and supply chain alerts.
* Containerized Python-based services using Docker and Docker Compose, enabling streamlined development, testing, and deployment across multiple environments.
* Automated infrastructure provisioning and cloud resource management using Terraform and Azure Bicep, implementing Infrastructure-as-Code (IaC) best practices.
* Designed and deployed CI/CD pipelines using Azure DevOps, GitHub Actions, and Jenkins, automating the build, test, and deployment processes across multi-region Azure environments.
* Integrated API security best practices using Azure API Management (APIM), WAF (Web Application Firewall), and DDoS Protection, ensuring secure API access and mitigating threats.
* Developed and executed comprehensive unit, integration, and end-to-end tests using PyTest (backend), Jest (Angular front-end), and Cypress (UI testing), achieving robust test coverage and reliability.
* Implemented real-time monitoring and logging using Azure Monitor, Application Insights, and ELK Stack (Elasticsearch, Logstash, Kibana), enabling proactive troubleshooting and system performance optimization.
* Optimized GraphQL queries and API response times, integrating Apollo Client with Angular and caching responses using Redis and Azure Cache for Redis, improving front-end data fetch efficiency.
* Enhanced security posture by implementing data encryption using Azure Key Vault, TLS/SSL enforcement, and OWASP security standards, securing sensitive patient and pharmaceutical data.
* Developed Azure Logic Apps and Power Automate workflows, streamlining business process automation for order approvals, compliance tracking, and vendor communications.
* Integrated third-party healthcare APIs such as FHIR (Fast Healthcare Interoperability Resources) and HL7 to seamlessly exchange electronic health records (EHR) across healthcare providers.
* Performed performance testing and API benchmarking using Locust, k6, and JMeter, optimizing service response times and ensuring scalability under high transaction loads.
* Collaborated with UX/UI designers to implement responsive, accessibility-compliant (WCAG) healthcare web applications, improving usability for pharmacists and medical staff.
* Led production support and incident management efforts, debugging Azure Application Insights telemetry data, using Distributed Tracing, and resolving critical issues in real-time.
* Participated in Agile Scrum development, using Azure Boards and Jira for sprint planning, backlog grooming, and cross-functional collaboration between engineering, QA, and product teams.
* Mentored junior developers, conducting code reviews, knowledge-sharing sessions, and hands-on workshops on Python best practices, Angular performance optimizations, and Azure cloud deployments.

**nCino, Wilmington, NC**   **December 2021 – March 2023**

**Senior Software Developer**

**Summary:** *nCino – a cloud banking solutions provider, aimed to enhance financial services by integrating Cloud Banking by NIQ with various financial platforms while ensuring security and compliance. The project involved developing scalable microservices using Python, AWS, and AI-driven automation for fraud detection and intelligent document processing. It optimized real-time banking workflows with event-driven architecture, enhanced API performance, and improved front-end user experience with Angular. The solution ensured seamless banking transactions, automated loan processing, and strengthened security while maintaining high availability and regulatory compliance.*

**Responsibilities:**

* Designed and implemented scalable, high-performance RESTful APIs using Flask and Django, enabling seamless integration between Cloud Banking by NIQ and various financial services platforms.
* Developed robust authentication and authorization mechanisms using OAuth 2.0, JWT, and AWS Cognito, implementing fine-grained Role-Based Access Control (RBAC) for secure banking transactions.
* Built AI-driven automation tools by integrating OpenAI’s GPT-3 and LangChain into banking workflows, enabling intelligent data extraction, document summarization, and chatbot interactions for financial analysts.
* Developed microservices-based banking solutions deployed on AWS Lambda, ECS (Fargate), and EKS (Kubernetes) to ensure highly available and fault-tolerant application architecture.
* Designed and optimized ETL pipelines using Apache Airflow, AWS Glue, and Pandas, automating data ingestion, transformation, and processing of large-scale financial datasets.
* Implemented event-driven architecture using AWS SNS, SQS, and Kafka, ensuring efficient real-time processing of loan applications, credit risk assessments, and compliance monitoring.
* Created AI-driven fraud detection models using TensorFlow, Scikit-Learn, and PyTorch, leveraging banking transaction history to detect anomalies and mitigate financial risks.
* Optimized SQL (PostgreSQL, MySQL) and NoSQL (DynamoDB, MongoDB) database performance, implementing indexing, partitioning, and query optimization for faster financial data retrieval.
* Built and containerized Python-based services using Docker and Docker Compose, standardizing environments across development, staging, and production environments.
* Deployed and orchestrated containerized Kubernetes (EKS) applications, configuring Helm charts, Ingress controllers, and auto-scaling policies to maintain high availability and fault tolerance.
* Automated AWS infrastructure provisioning using Terraform and AWS CloudFormation, setting up VPCs, security groups, RDS instances, and IAM roles in a version-controlled manner.
* Implemented CI/CD pipelines using Jenkins, GitHub Actions, and AWS CodePipeline, automating testing, security scans, and blue-green deployments to minimize downtime.
* Integrated static code analysis and security scanning tools like SonarQube, Bandit, and Trivy, ensuring secure and maintainable banking application code.
* Developed and executed unit, integration, and end-to-end tests using PyTest, Cypress (for Angular UI testing), and Selenium, ensuring high test coverage and system stability.
* Created and maintained comprehensive API documentation using Swagger (OpenAPI) and Postman, improving developer experience and cross-team collaboration.
* Developed front-end components using Angular with RxJS, NgRx state management, and Material UI, ensuring an interactive and responsive banking user interface.
* Integrated Python back-end APIs with Angular front-end using GraphQL and REST API, reducing client-server communication latency and improving data handling efficiency.
* Enhanced banking application security by implementing encryption (AWS KMS), secret management (AWS Secrets Manager), and API Gateway security policies, ensuring compliance with financial industry regulations.
* Optimized Redis-based caching strategies to enhance transaction processing speeds and reduce API latency for real-time banking services.
* Built logging, monitoring, and alerting solutions using AWS CloudWatch, Prometheus-Grafana, and ELK Stack (Elasticsearch, Logstash, Kibana) to proactively identify and resolve production issues.
* Performed root cause analysis and troubleshooting in production using AWS X-Ray for distributed tracing, Kibana for log analytics, and pgAdmin for database debugging.
* Worked in Agile development efforts, participating in Scrum ceremonies using Jira and Confluence, ensuring seamless collaboration between cross-functional teams.
* Conducted in-depth code reviews using GitHub PR workflows and SonarLint, ensuring adherence to Python best practices, security guidelines, and clean code principles.

**Cerner Corporation, Kansas City, MO Mar 2020 – Oct 2021**

**Software Developer**

**Summary:** *Cerner – a healthcare technology provider, aimed to streamline claims processing by integrating Electronic Health Records (EHR) with insurance platforms while ensuring HIPAA compliance. The project involved developing secure, scalable microservices using Python, AWS, and machine learning for fraud detection, optimizing workflows with AWS Step Functions, and enhancing system performance with asynchronous processing and caching. The solution automated claims adjudication, improved API performance, and ensured seamless integration with front-end applications while maintaining high security and reliability standards.*

**Responsibilities:**

* Designed and implemented RESTful APIs using Flask and Django, ensuring efficient interaction between insurance claims management systems and EHR platforms, with strict adherence to HIPAA compliance and data protection.
* Developed secure authentication and authorization mechanisms using OAuth 2.0, JWT, and RBAC, integrating with AWS Cognito for scalable identity management and multi-factor authentication (MFA).
* Designed and built microservices-based solutions using Python deployed on AWS Lambda and ECS Fargate, utilizing FastAPI for high-performance request handling in insurance claims validation workflows.
* Implemented AWS Step Functions for orchestrating complex workflows such as multi-step claims processing, integrating with DynamoDB, RDS (PostgreSQL/MySQL), S3, and SNS/SQS for efficient event-driven operations.
* Designed and optimized scalable data pipelines using AWS Glue, Apache Spark, and Pandas, processing large volumes of structured and unstructured claims and patient records.
* Integrated machine learning models for fraud detection in insurance claims using TensorFlow and Scikit-Learn, deploying trained models via AWS SageMaker and serving real-time predictions using Flask-RESTful API.
* Optimized NoSQL (MongoDB, DynamoDB) and SQL (PostgreSQL, MySQL) database queries, ensuring low-latency patient and claims data retrieval, implementing indexing strategies, partitioning, and caching with Redis.
* Developed asynchronous task execution pipelines using Celery with RabbitMQ/SQS, improving performance in batch claims adjudication and document processing workflows.
* Built containerized applications using Docker and Docker Compose, standardizing development environments and eliminating dependency conflicts across multiple services.
* Deployed and orchestrated microservices on Kubernetes (EKS), configuring Helm charts, RBAC policies, and horizontal pod autoscaling (HPA) for efficient workload management.
* Automated infrastructure provisioning using Terraform and AWS CloudFormation, setting up VPCs, IAM policies, RDS instances, S3 buckets, and security groups in a repeatable and version-controlled manner.
* Implemented CI/CD pipelines with Jenkins, GitHub Actions, and AWS CodePipeline, automating build, test, and deployment stages and integrating static code analysis using SonarQube.
* Developed comprehensive unit and integration tests using PyTest and Unittest, ensuring code reliability and achieving high test coverage with mocking, patching, and dependency injection techniques.
* Created API contract testing suites with Postman and Pact to validate compliance between front-end and back-end services, reducing integration issues.
* Performed load and stress testing using Apache JMeter and Locust, benchmarking API performance under simulated peak loads and optimizing response times with Gunicorn and Nginx configurations.
* Developed extensive API documentation using Swagger (OpenAPI) and Postman, facilitating seamless integration for internal and external development teams.
* Implemented event-driven architecture using AWS SNS and SQS for decoupled and scalable claims processing, reducing bottlenecks in asynchronous workflows.
* Integrated logging, monitoring, and alerting using AWS CloudWatch, ELK Stack (Elasticsearch, Logstash, Kibana), and Prometheus-Grafana, enabling proactive identification and resolution of production issues.
* Collaborated with Angular 4 and Node.js teams to ensure front-end integration, define API response structures, and optimize client-server communication patterns.
* Worked on production support efforts, diagnosing and resolving critical issues in real-time, performing root cause analysis using AWS X-Ray for distributed tracing, and debugging database queries with pgAdmin and Mongo Compass.
* Optimized AWS resource utilization, implementing cost-effective solutions such as EC2 Auto Scaling, Lambda cold start optimizations, and DynamoDB on-demand capacity mode.
* Worked closely with DevOps teams, enhancing deployment strategies and implementing Canary and Blue-Green deployment patterns to minimize downtime during application updates.
* Actively participated in Agile Scrum workflows, conducting sprint planning, backlog grooming, and retrospectives using Jira and Confluence, ensuring timely delivery of key product features.
* Conducted in-depth code reviews using GitHub PR workflows and SonarLint, enforcing clean code principles, security best practices, and maintainability improvements.

**SKILLS:**

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| Programming & Frameworks | Python (FastAPI, Django, Flask), JavaScript/TypeScript (Angular, RxJS, NgRx), AI/ML (GPT-4, PyTorch, Scikit-Learn, TensorFlow), GraphQL, RESTful APIs |
| Cloud & DevOps | Azure (AKS, Functions, Logic Apps, APIM, Cosmos DB, Azure AD B2C), AWS (EKS, Lambda, Step Functions, S3, RDS, DynamoDB, Cognito), Kubernetes (Helm, Ingress, RBAC, Auto-scaling), Terraform, Azure Bicep, CloudFormation, CI/CD (Azure DevOps, GitHub Actions, Jenkins) |
| Databases & Storage | SQL (PostgreSQL, MySQL, SQL Server), NoSQL (MongoDB, DynamoDB, Cosmos DB), Redis, Elasticsearch, Apache Kafka |
| Security & Authentication | OAuth 2.0, JWT, MSAL, RBAC, Azure Key Vault, AWS KMS, API Security (APIM, WAF, DDoS Protection) |
| Testing & Monitoring | Unit, Integration & E2E Testing (PyTest, Jest, Cypress, Locust), Logging & Monitoring (Azure Monitor, ELK Stack, Prometheus-Grafana) |
| Agile & Team Collaboration | Agile Scrum (Jira, Azure Boards, Confluence), Code Reviews, Mentorship, Sprint Planning, Backlog Grooming |

**EDUCATION:**

Northwest Missouri State University, Bachelor of Science in Computer Science, GPA:3.56 2017-2021

University of the Cumberlands, Masters of Science in Information technology, GPA 4.0 2024-2025