

Syed Usman Bukhari

Telephone: 07462660889 | Email: usmanbukhari541@gmail.com | Portfolio: usmanbukhari.co.uk

Highly skilled and results-driven Full Stack & DevOps Engineer with extensive hands-on coding experience across multiple programming languages, frameworks, and cloud platforms. Proficient in designing, developing, and optimizing high-performance backend systems, APIs, and cloud infrastructure. Demonstrated expertise in automating deployments, architecting scalable solutions, and implementing advanced CI/CD pipelines for robust and efficient software delivery. Proven track record in enhancing system performance, leading successful migrations to modern cloud environments, and enforcing stringent security standards. Passionate about writing clean, efficient, and maintainable code to deliver scalable, reliable, and seamless user experiences.

Technical Skills: Backend Development | API Design & Microservices | Cloud Architecture (AWS, Azure, GCP) | DevOps & CI/CD Pipelines | Infrastructure as Code (Terraform, Ansible) | Python (Django, Flask, FastAPI) | Node.js (Express.js, Nest.js) | C#, .NET Core | PostgreSQL, MongoDB, MySQL, DynamoDB | GraphQL, REST, OpenAPI | AWS API Gateway, Lambda, Step Functions, ECS, EKS | System Scalability & Security (JWT, OAuth2, RBAC, API Rate Limiting) | ETL Pipelines & Data Processing | Performance Optimization & Caching (Redis, CloudFront, Memcached) | TDD & Continuous Security | Shopify (Liquid, Shopify APIs) | Containerization (Docker, Kubernetes, Helm) | Version Control & Project Management (Git, BitBucket, Jira, Trello, GitHub Actions) | Azure DevOps | Continuous Integration (Jenkins, GitLab CI) | Scripting & Automation (Bash, PowerShell) | Agile & Scrum Methodologies

Career Summary

March 2025 - Present

Senior AI Systems Contractor

AI Developer & Data Architecture Specialist - NHS Digital Transformation Initiative

- **Architected and deployed a high-performance, fault-tolerant web scraping infrastructure** using Crawl4AI (Python) with custom middleware, extracting structured healthcare service data from **50+ heterogeneous regional websites** (~2.5M data points monthly), directly supporting **unemployment and healthcare access initiatives** across South Yorkshire's **1.4M population**.
- **Designed and implemented a production-grade, event-driven data pipeline** on **Azure Functions** utilizing **serverless microservices architecture** with queue triggers, timer-based orchestration, and **automatic failover mechanisms**, achieving **99.7% uptime** and processing **15,000+ daily records** with sub-5-second latency.
- **Pioneered comprehensive data standardisation protocols**, transforming disparate healthcare datasets into **enterprise-grade, AI-optimised JSON schemas** with **semantic validation layers**, enabling **seamless API integration** with existing NHS systems and supporting **real-time data federation** across **12 regional health authorities**.
- **Implemented advanced vector search capabilities** using **Azure AI Search** with **768-dimensional embeddings** (OpenAI Ada-002), creating a **semantic knowledge graph** that improved **service discovery accuracy by 85%** and reduced **citizen query resolution time from 12 minutes to under 30 seconds**.
- **Led the deployment of a Microsoft Conversational AI framework** with **custom knowledge grounding**, integrating **multi-modal search capabilities** and **context-aware dialogue management**, serving **3,000+ monthly active users** with **94% query success rate** and **4.8/5 user satisfaction scores**.
- **Developed sophisticated LLM orchestration pipelines** implementing **automated content enrichment workflows** (intelligent auto-tagging, **extractive and abstractive summarisation**, **hierarchical service clustering** using K-means++, and **ML-powered metadata augmentation**), improving **data completeness by 73%** and **search relevance by 61%**.
- **Engineered a production RAG (Retrieval-Augmented Generation) system** using **LangChain** with **custom retrieval chains**, combining **hybrid search (lexical + semantic)** with **Azure OpenAI GPT-4**, ensuring **factually consistent responses** with **90% accuracy validation** against NHS clinical guidelines and **zero hallucination incidents** in production.

- **Innovated synthetic data generation methodologies** using **conditional GANs** and **large language models** for **privacy-preserving dataset augmentation**, creating **10,000+ synthetic service records** to enhance **model robustness testing** and address **data gaps in underserved geographic areas** while maintaining **GDPR compliance**.
- **Spearheaded cross-functional collaboration** with **NHS Digital leadership, clinical stakeholders, and regional commissioners**, conducting **technical feasibility assessments, stakeholder requirements workshops, and iterative solution design sessions**, ensuring **100% alignment** with NHS accessibility standards and **regional health equity objectives**.

Key Technical Achievements:

- Reduced manual data processing overhead by **89%**
- Achieved **£180K annual cost savings** through automation
- Delivered solution **6 weeks ahead of schedule**
- Maintained **zero security incidents** with **SOC 2 Type II compliance**

Feb 2024 – Present

Full Stack & DevOps Engineer – TSG/Dayta (Sage Partner)

- Designed, implemented, and optimized end-to-end CI/CD pipelines using AWS CodeBuild, CodePipeline, and API Gateway, achieving streamlined deployments and significantly enhancing software delivery efficiency.
- Managed Infrastructure-as-Code (IaC) using Terraform for scalable, automated, and repeatable cloud resource provisioning on AWS, ensuring consistent environments and infrastructure stability.
- Architected and maintained serverless applications leveraging AWS Lambda and Step Functions to orchestrate sophisticated, event-driven workflows, improving automation and reliability.
- Built robust monitoring and logging solutions to proactively identify and resolve performance bottlenecks and operational issues, improving application uptime and user experience.
- Integrated security best practices across development and deployment processes by enforcing Test-Driven Development (TDD), continuous security practices, authentication mechanisms, encryption standards, and comprehensive API security.
- Developed and deployed robust backend applications utilizing Node.js and TypeScript, integrating seamlessly with third-party financial budgeting software IMP, ensuring real-time data synchronization and enhanced financial reporting capabilities.
- Built and deployed scalable two-way integration applications using Docker containers orchestrated on AWS Elastic Kubernetes Service (EKS), significantly enhancing application scalability and fault tolerance.
- Managed continuous integration and deployment processes via GitHub Actions and Jenkins, ensuring robust automation and streamlined continuous delivery with minimal manual intervention.
- Developed internal productivity and client-support tools using Python with Flask and React on AWS Amplify, significantly enhancing productivity, workflow automation, and consultant efficiency.
- Collaborate cross-functionally in Agile teams to continuously improve infrastructure resilience, scalability, performance, and system interoperability. Successfully handled the complete migration of infrastructure from AWS to Azure, ensuring minimal downtime and seamless transition for all services.

Key Achievements:

- Successfully automated deployment workflows using Kubernetes & Terraform, reducing downtime by 40%.
- Optimized backend architecture to efficiently handle double the traffic load, ensuring zero performance degradation under peak usage scenarios.
- Implemented robust monitoring and alerting solutions, reducing issue detection time by 50% and enhancing overall system reliability.
- Integrated seamless third-party software solutions (IMP) resulting in real-time financial data synchronization, significantly improving decision-making speed and accuracy.
- Enhanced security practices by enforcing comprehensive API security standards, resulting in zero security breaches and full compliance with industry regulations.
-

Jan 2022 – Feb 2024

Full Stack Engineer – Citadel Health

- Designed and developed intuitive, responsive frontend interfaces for Laboratory Information Management Systems (LIMS) using React, significantly enhancing user experience and streamlining laboratory workflows.
- Developed robust RESTful APIs using Django REST Framework (DRF) and OpenAPI, supporting high-volume and mission-critical LIMS operations.
- Engineered cloud-native applications leveraging AWS infrastructure (EC2, S3, RDS, Lambda, API Gateway, IAM) to achieve scalable and resilient LIMS deployments.
- Expertly utilized Rhapsody Integration Engine for seamless integration of HL7 and FHIR APIs, ensuring robust interoperability with Electronic Health Records (EHRs) and hospital systems.
- Actively participated in client demonstrations and provided on-call support, facilitating client onboarding and enhancing customer satisfaction.
- Refactored legacy monolithic applications into modern microservices architectures, significantly improving system scalability, modularity, and maintainability.
- Created detailed API documentation using Swagger and OpenAPI, improving developer efficiency and team collaboration.
- Implemented advanced CI/CD pipelines using GitHub Actions and Jenkins, accelerating deployment cycles and ensuring code quality and stability.

Key Achievements:

- Led the development of a secure and efficient LIMS, achieving a 35% reduction in sample processing time.
- Optimized API performance, decreasing response times by 30%.
- Enhanced system performance by implementing Redis caching and AWS CloudFront, significantly reducing database load.
- Achieved 20% cost savings on AWS infrastructure through strategic resource optimization and the adoption of Docker and Kubernetes for containerization.
- Developed real-time system monitoring dashboards using Prometheus and Grafana, greatly enhancing visibility into system performance and reliability.

Jan 2019 – Jan 2022

Ai/Data Engineer – [Chalkys.com](https://chalkys.com) (Shopify)

- Developed a robust Django-based API supporting comprehensive e-commerce operations, including product catalog management, order processing, and seamless customer interactions.
- Leveraged AWS SageMaker to build and deploy sophisticated machine learning models, enabling dynamic user recommendations such as “Recently Viewed”, “You May Also Like”, and “People Usually Buy With”, resulting in a 25% increase in upsell conversions.
- Implemented advanced image recognition systems using AWS SageMaker, automatically generating descriptive alt-text and accurate product tagging, significantly enhancing SEO.
- Designed and automated robust ETL pipelines capable of efficiently processing terabytes of product data from FTP sources, performing competitor price analysis, and extensive product data scraping.
- Utilized OpenAI's API to intelligently fill in missing product data points, such as detailed descriptions, ensuring comprehensive product metadata coverage and improving customer engagement.
- Integrated secure third-party payment solutions, including PayPal, ensuring smooth and secure transaction processing.
- Optimized PostgreSQL and MySQL database performance, substantially improving query execution times and overall system responsiveness.
- Fully redesigned and rebuilt Shopify stores using the latest Dawn theme, delivering substantial frontend performance improvements and a superior user experience.

Key Achievements:

- Increased upsell conversions by 25% through AI-driven recommendation systems.
- Enhanced SEO visibility significantly through automated image recognition and alt-text generation.
- Streamlined data processing and analysis by successfully handling and extracting insights from terabytes of FTP-sourced product data.
- Improved database query speeds and overall system responsiveness through optimized PostgreSQL and MySQL implementations.
- Achieved substantial improvements in frontend performance and user engagement by revamping Shopify storefronts.

Jan 2024 - July 2024 - Freelance

API Engineer – Anglestack

- Developed scalable, serverless APIs adhering to RESTful architecture using AWS API Gateway, Lambda, and DynamoDB, providing efficient and reliable access to critical building data for construction companies.
- Implemented secure authentication and robust role-based access control utilizing AWS Cognito, ensuring protected and precise API access management.
- Constructed responsive frontend applications with React and Next.js, integrating seamlessly with AWS Amplify to streamline deployment processes and enhance scalability.
- Managed version control and continuous integration/continuous deployment (CI/CD) pipelines using Bitbucket, promoting efficient collaboration, rapid iteration, and reliable deployments.

Key Achievements:

- Delivered fully serverless, REST-compliant APIs, significantly reducing infrastructure costs and simplifying maintenance.
- Enhanced security, compliance, and scalability through strategic implementation of AWS Cognito, API Gateway, and Lambda services.
- Streamlined development workflows and deployment efficiency through effective management of CI/CD processes using Bitbucket.

June 2023 - Present - Contractor/Freelancer

CRM / Full stack Engineer/Travel Consultant– tic.uk,

- Integrated and customised **Braze CRM** to build and manage multi-channel customer campaigns (**Email, Push, IAM, Content Cards, WhatsApp**), enhancing client engagement within the travel industry.
 - Developed backend microservices (**Python**) to ensure efficient integration between Braze and internal platforms, supporting seamless data flows and real-time campaign triggers.
 - Designed dynamic, responsive campaign templates using templating engines (**Liquid, Handlebars, MJML**), enabling highly personalised customer communications tailored specifically for travel booking journeys.
 - Leveraged **Braze Canvas** to orchestrate sophisticated customer journeys, significantly improving customer retention and conversion rates.
 - Collaborated with leading travel companies to develop custom CRM solutions tailored to their unique operational needs, employing diverse technology stacks including **PHP (Laravel)** and **Python**.
 - Built and deployed **ATOL**, a client-facing platform allowing end-users to easily track travel bookings, itineraries, and departure information, enhancing customer satisfaction and operational transparency.
 - Provided technical support and customisation for clients utilising **Zoho CRM**, including integration with internal systems, automations, and workflow optimisation.
 - Optimised overall CRM performance by proactively identifying and resolving backend performance bottlenecks, ensuring high scalability during peak booking periods.
 - Managed robust QA, documentation, and deployment workflows, ensuring adherence to high standards of performance, security, and accessibility.
-

Education and Professional Training

- AWS Solutions Architect Certification – eCareers
- AWS Cloud Practitioner Certification
- Data Engineering Program – Ai Core
- Shopify Course – SuperHi
- BSc Engineering Mathematics – University of Bristol
- Databricks Certified Data Engineer Associate Exam
- Advanced Data Engineering and Cloud Computing Courses – Coursera
- Python and Cloud Infrastructure Courses – Udemy

Portfolio

Explore my projects and technical contributions at: usmanbukhari.co.uk