Software Engineer

Location: London, UK **Years of Experience**: 5+ years in software engineering

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Professional Summary

Experienced Software Engineer with a strong focus on cloud platforms, test-driven development, and maintainable code. Proven track record delivering secure, scalable solutions in mission-critical public sector and healthcare environments. Expertise in AWS serverless architectures, Python, PostgreSQL, and modern DevOps practices. Highly collaborative team member with strong communication skills and a commitment to engineering excellence.

Professional Experience

Senior Software Engineer (Consultant) — UK Home Office

May 2024 – Present

Working on the National Crime Data Service (NCDS) delivering critical public sector infrastructure:

Cloud Platform & AWS Serverless Architecture - Designed and implemented AWS serverless ingestion pipelines using Lambda, Step Functions, and S3 event-driven architecture - Built fault-tolerant systems with concurrency controls, retry logic with exponential back-off, and Dead Letter Queues for reliable message processing - Deployed infrastructure as code using Terraform, managing multiple environments with GitLab CI/CD pipelines - Implemented CloudWatch monitoring, structured logging, and distributed tracing to strengthen observability and system reliability

Database Design & Data Management - Designed and implemented PostgreSQL repository patterns for secure, multi-tenant data access - Created complex SQL queries including user authentication contexts, visualisation restriction status checks, and assignment operations - Optimized database schema design to improve data consistency and performance across the Visualise API - Implemented Liquibase for database migrations and reference data seeding, improving traceability and rollback safety

Python Development & Clean Code - Developed multiple Lambda functions in Python using dataclasses for schema validation and type safety - Created shared data model libraries adhering to DRY principles, ensuring consistent schemas across 10+ Lambda functions - Chose Python dataclasses over ORMs like SQLAlchemy for improved cold-start performance and reduced attack surface - Implemented comprehensive business rule validation workflows including role-based access control and organisation-level authorisation

Testing & Quality Assurance - Created comprehensive test suites achieving high coverage across Lambda functions and repository layers using pytest - Developed automated unit tests with mocking strategies to ensure reliable, maintainable code - Worked closely with QA team to validate log routing, accuracy, and compliance across multiple environments - Fixed critical production issues including JWT token claim extraction for WSO2 SSO integration and database schema mismatches

Collaboration & Technical Leadership - Explained complex technical concepts to non-technical stakeholders including business owners and senior architects - Collaborated closely with engineers to refine shared architecture and enforce clean, maintainable design across services - Led technical discussions on architectural decisions and design patterns - Mentored team members on AWS best practices, Python development, and testing strategies

Search & Visualization - Worked with Elasticsearch and Kibana for data visualization and search capabilities - Configured multi-tenant access models with organisation-scoped Kibana spaces and API keys

Software Engineer — Government Contractor

February 2023 – May 2024

Delivered enterprise solutions for DEFRA's export applications:

- Built modular monolith architecture with separate deployments on Azure App Services
- Implemented decoupled service communication using Azure Service Bus and Function Apps
- Practiced TDD, pair programming, and GitFlow strategies in an Agile environment
- Recognized as "valued team member" for reliability and clear communication

Software Engineer — Healthcare Technology Consultancy

March 2020 – January 2023

Delivered FHIR-compliant healthcare interoperability solutions:

- Integrated with US Electronic Medical Records provider to build REST API services
- Developed Java/Spring Boot back-end services with Azure Service Bus message processing
- Advocated Domain-Driven Design and hexagonal architecture principles
- Promoted engineering excellence through systematic testing, continuous integration, and thorough code reviews

Software Developer — Property Technology Company

March 2018 – February 2020

Built features for national property-listing platform:

- Developed REST APIs for lead generation and communication tools
- Improved test coverage and reliability through systematic test-driven development
- Delivered complex business features for CMS and API platform serving estate agents nationwide

Intensive Software Engineering Bootcamp

September – December 2017

- Completed intensive 16-week bootcamp focused on TDD, OOP, Agile methodologies, and pair programming
- Delivered multiple full-stack engineering projects using Ruby, JavaScript, and web frameworks

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Technical Skills

Programming Languages - Python (primary), JavaScript, TypeScript, Java, Ruby, SQL

Cloud & Infrastructure - AWS: Lambda, Step Functions, S3, CloudWatch, Secrets Manager, EC2 - Azure: Service Bus, DevOps, Function Apps, App Services - Terraform (Infrastructure as Code) - Docker containerization

Databases & Data - PostgreSQL (complex schema design, query optimization) - Elasticsearch & Kibana - MySQL - Liquibase (database migrations) - NoSQL experience

DevOps & CI/CD - GitLab CI/CD pipelines - Git version control (branching strategies, code reviews) - Automated testing and deployment - Infrastructure as code

Frameworks & Tools - Spring Boot - React - Ruby on Rails - pytest, JUnit, Mockito, Cucumber - Python dataclasses

Software Engineering Practices - Test-Driven Development (TDD) - Repository Pattern - Event-Driven Architecture - REST API design and development - Agile/Scrum methodologies - Pair programming - Code reviews and mentoring

Security & Identity - WSO2 Identity Server (SSO integration) - JWT token validation - Role-based access control (RBAC) - Multi-tenant security models - Secure coding practices

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Education

Postgraduate Certificate in Education (PGCE) *Leading UK University*

Master of Arts (MA) in Classics *Leading UK University*

Bachelor of Arts (BA) with First-Class Honours *Leading UK University*

Software Engineering Intensive Bootcamp *Leading UK Coding Academy*

Certifications

AWS Certified Cloud Practitioner (2023)

Key Achievements

- Successfully delivered assign-user Lambda endpoint from requirements through to production, implementing 11 business rule validations
- Resolved critical production issues including WSO2 JWT integration and database schema mismatches in multi-tenant operations
- Achieved high test coverage across Lambda functions and repository layers through disciplined TDD approach
- Contributed to shared Python data model library used across 10+ AWS Lambda functions
- Recognized with performance award for delivery, technical innovation, and engineering quality

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Professional Attributes

- Proactive problem solver who identifies issues early and proposes solutions
- Clear communicator able to explain technical concepts to non-technical stakeholders
- Reliable team member who delivers high-quality work with minimal supervision
- Eager to learn new technologies and share knowledge with colleagues
- Collaborative approach to software development with strong pair programming skills
- Committed to clean code, maintainability, and engineering best practices