

Azmat Hussain

Senior Software Engineer

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PROFESSIONAL SUMMARY

Seasoned Senior Software Engineer with extensive experience in software architecture, application development, and system optimization. Adept at designing scalable, high-performance solutions across cloud and on-prem environments. Proven track record in full-stack development, microservices architecture, and real-time distributed systems. Skilled in Agile methodologies, test automation, CI/CD integration, and cross-functional collaboration to drive business impact.

SKILLS

Programming & Software Development: Python, Go (Golang), Java, C, C++, C, .NET, JavaScript, TypeScript, Ruby, Bash, PowerShell

Software Architecture & Design: Microservices, RESTful APIs, GraphQL, Event-Driven Architecture, Serverless, Distributed Systems

Application Development Frameworks: Spring Boot, Django, Express.js, Flask, .NET Framework, Ruby on Rails

Cloud & Virtualization: Tekton, Jenkins, GitLab CI, TravisCI, CircleCI, Spinnaker, Helm

Containerization & Orchestration: Docker, Kubernetes (EKS, GKE, MicroK8s, Minikube), Helm

Database & Data Processing: PostgreSQL, Oracle SQL, MySQL, MongoDB, Apache Kafka, Apache Camel, Apache Spark, RabbitMQ, ActiveMQ

CI/CD & Software Automation: Jenkins, GitLab CI, CircleCI, Spinnaker, Tekton, ArgoCD, Octopus Deploy

Infrastructure as Code (IaC) & Configuration Management: Terraform, Ansible, Helm, CloudFormation, ARM Templates

Security & Compliance: IAM, OAuth2, JWT, Role-Based Access Control (RBAC), AWS Secrets Manager, Secure Coding

Monitoring & Observability: Grafana, ELK Stack, CloudWatch, Prometheus, Sysdig, Splunk, PagerDuty, Dynatrace, AppDynamics

Version Control: Git, GitHub, GitLab, SVN, CVS

Security Protocols: IAM, KMS, WAF, Network ACLs, Security Groups, SSL/TLS

Testing & Quality Assurance: Selenium WebDriver, JUnit, TestNG, Cucumber, MSTest, xUnit.Net, Performance Load Testing

PROFESSIONAL EXPERIENCE

OptionCare Health (Contract-to-Hire)

Senior DevSecOps Engineer, ReferencePoint Application

Bannockburn, Illinois (Hybrid-Remote)

Nov 2024 – Apr 2025

- **Infrastructure as Code (IaC):** Designed and implemented modular Ansible roles and dynamic inventory systems to manage hybrid infrastructure, including Windows and Linux servers, across production and DR environments. Automated credential management workflows and incorporated secure property file switching for role-based (RBAC) and IAM-sensitive deployments
- **Secure Service Orchestration:** Engineered a Go-based service management platform using REST APIs over mutual TLS (mTLS) for identity-verified communication. Integrated strong IAM principles by requiring client certificates for agent authentication and role-based access to orchestration endpoints.
- **Certificate-Based Access Control (CBAC):** Implemented a certificate-based mutual TLS authenticating service mesh using certificates from the Windows Certificate storage. Centralized certificate validation and trust store configuration for consistent certificate enforcement across agents. Eliminated per-agent certificate sprawl by consolidating authorization logic at the controller.
- **Monitoring & Observability:** Integrated server and network metrics into Prometheus and Grafana dashboards with identity-aware access to monitoring agents. Extended RBAC and IAM practices to restrict metric endpoint access to controller-authenticated sessions using mTLS.
- **Kubernetes & Container Management:** Managed lightweight Kubernetes clusters using MicroK8s and automated Portainer version upgrades across Ubuntu nodes. Enforced RBAC and IAM policies for access to container dashboards and API endpoints via secured ingress configurations.
- **ServiceNow & API Integrations:** Built and tested Go-based automation to integrate with ServiceNow APIs using secure credentials. Transitioned from federated Okta SSO to direct basic authentication, preserving secure identity context while simplifying IAM token dependencies.
- **Logging & Reporting:** Automated log rotation, VM snapshotting, and zeroing strategies for privileged Windows services. Ensured identity-traceable logs by tagging API and service interactions with source certificates and user metadata, reinforcing auditability and IAM compliance.

- **CI/CD Pipeline Engineering:** Refactored Go applications into modular controller and agent binaries with secure YAML configurations. Integrated IAM enforcement into GitHub CI/CD workflows for role-scoped secrets and per-agent identity deployment targeting.
- **Windows Systems Automation:** Built automation tools using PowerShell and Ansible to manage identity-bound services, including auto-discovery of IAM- and RBAC-restricted Scheduled Tasks. Developed agents that use authenticated TLS channels for per-service control, incorporating certificate-based identity validation.

International Business Machines (IBM)

Staff Software Engineer, IBM Cloud Platform

Chicago Metro Area, Illinois

Nov 2020 – Oct 2024

- **Application Architecture:** Designed and developed enterprise-grade Java applications on IBM Cloud with a focus on modularity and maintainability. Engineered microservices using Spring Boot and deployed them on IBM Cloud Kubernetes Service (IKS) for high availability and resilience.
- **Model Deployment Pipelines:** Implemented model deployment workflows using IBM Cloud Continuous Delivery with Tekton, integrating GitHub and DevOps Insights to support consistent, automated releases of WatsonX models.
- **Cloud-Native APIs:** Designed and exposed RESTful APIs using FastAPI, containerized with Docker, and deployed on Red Hat OpenShift. Secured endpoints using IBM API Connect and App ID for token-based authentication and access control.
- **Data Pipeline Engineering:** Developed scalable ETL pipelines using WatsonX.data and CloudPak for Data to transform structured and unstructured enterprise data into embeddings for use in retrieval-augmented generation (RAG) workflows. Enabled real-time ingestion using IBM Event Streams (Kafka) and IBM Cloud Functions.
- **Infrastructure Automation:** Provisioned reproducible infrastructure for WatsonX environments using IBM Cloud Schematics (Terraform) and automated configuration management using Ansible. Ensured support for GPUs, object storage, and Kubernetes clusters.
- **Foundation Model Operations:** Integrated and fine-tuned large foundation models and LLMs on IBM WatsonX.ai. Built lifecycle workflows for training, evaluation, and monitoring using Watson Machine Learning and OpenShift AI.
- **Security Engineering:** Implemented OAuth2, JWT-based authorization, and RBAC policies using IBM IAM. Secured credentials and model secrets using IBM Key Protect and Secrets Manager. Conducted security assessments via SonarQube and IBM Cloud Security Advisor.
- **Observability & Monitoring:** Instrumented applications with ELK (Elasticsearch, Logstash, Kibana) and IBM Instana for distributed tracing, logging, and real-time metrics. Developed observability pipelines for WatsonX to ensure SLA compliance and performance visibility.
- **Incident Management:** Diagnosed and resolved production issues using IBM Cloud Logging, Splunk, and PagerDuty. Built automated anomaly detection pipelines using Prometheus and Grafana, reducing mean time to resolution (MTTR) by 40%. Facilitated post-incident reviews and coverage improvements.
- **Cross-Functional Collaboration:** Partnered with data scientists, platform engineers, and product teams to align model capabilities with enterprise business needs. Facilitated integration of AI solutions across departments by translating technical concepts into actionable implementation plans, accelerating adoption of WatsonX across client use cases.

Inspirit-IoT

Senior Software Engineer, Wander Management Facial Recognition System

Chicago Metro Area, Illinois

May 2019 – Sept 2020

- **Real-Time Video Analytics:** Led the design and development of a next-generation real-time video analytics platform for high-precision capture, detection, and facial recognition of subjects, leveraging advanced AI techniques. Utilized New Relic and Datadog AIOps monitoring for performance tracking and anomaly detection, ensuring the system enforced access policies under mission-critical on-premise operating constraints.
- **End-to-End System Design:** Integrated an on-premises video management system (VMS) with AWS cloud services to build an AI-powered facial recognition system, utilizing deep learning frameworks like Tensorflow for neural network processing. Enhanced system observability by implementing Dynatrace and AppDynamics for real-time monitoring, enabling predictive analysis and proactive system tuning.
- **Data Ingestion and Processing:** Utilized Apache Kafka for high-throughput data ingestion and event streaming across the facial recognition pipeline. Employed ApacheMQ and RabbitMQ for communication between microservices, and New Relic for detailed insights into message throughput and system performance, reducing bottlenecks in real-time recognition processes.
- **Data Analytics and Visualization:** Integrated a C++ server-side layer with Python-based Tensorflow models to perform machine learning-driven analytics on facial data. Insights generated were exposed via RESTful APIs for event-driven notifications, with Datadog employed for visualizing endpoint metrics and ensuring real-time analytics delivery at scale.
- **Scripting & Automation:** Automated infrastructure management tasks on IBM Cloud using Octopus Deploy, GitHub Actions and Ansible playbooks, eliminating the need for manual interventions during deployments and reducing operational overhead.
- **Cloud Migration:** Led the migration of on-premise infrastructure to AWS, replacing on-prem Intel Arria FPGA's with Microsoft Azure FPGA instances for enhanced scalability and efficiency. Migrated storage from on-prem secure NAS to AWS S3, cutting infrastructure costs by 45% while ensuring 99.9% system availability.

- **Cloud Storage:** Employed Amazon S3 for scalable, compliant storage of facial recognition data, ensuring secure and efficient handling of video analysis workflows. Integrated AppDynamics for continuous monitoring of storage access patterns, enabling automated alerts for potential performance or security issues.
- **Agile and DevOps:** Spearheaded Agile and DevOps practices across cross-functional teams, ensuring continuous integration and delivery of facial recognition applications.
- **Client Engagement:** Continuously collaborated with clients, stakeholders, and cross-disciplinary teams to refine project requirements and align them with cutting-edge AI and facial recognition technology.

Intel Corporation

Portland, Oregon

Senior Software Developer and DevOps Engineer, Validation Architecture for Mobile, Desktop, HPC/AI Jan 2004 – May 2019

- **CI/CD Integration:** Deployed Jenkins and GitLab CI/CD pipelines for Intel hardware validation automation, reducing test duration by 55% .
- **Volume Testing:** Administered a thin-client test simulation framework utilizing Docker and Kubernetes, enhancing resource usage by 60% and decreasing resource wait times time by over 50%.
- **Code-driven Infrastructure:** Employed Terraform and Ansible for automating the deployment of 300+ resources across on-premise and cloud platforms, achieving a 65% reduction in manual labor.
- **Monitoring & Notifications:** Incorporated Grafana, Prometheus, and ELK Stack for real-time supervision of hardware validation infrastructure, shortening incident resolution time by 45% and boosting system reliability.
- **Cloud Transition:** Shifted hardware validation infrastructure from on-premise to the private datacenter, reducing infrastructure expenses by 45% and elevating resource availability to 99%.
- **Revision Control:** Adopted Git methodologies and Bitbucket for streamlined version control management of validation scripts and test scenarios, cutting merge conflicts by 75%.
- **Incident Handling:** Established hardware validation incident response processes utilizing PagerDuty and Jira Service Management, reducing mean time to resolution (MTTR) by 60% and improving SLA compliance.
- **Cross-Functional Leadership:** Led 10 cross-functional teams to validate Intel's EDRAM technology for accelerated graphics performance for mobile and desktop products, resulting in division recognition for timely delivery in 3 quarters.
- **Validation Software:** Revamped architecture validation software, receiving quality awards and growing the user-base by 10x, while reducing errors by 66% and production defects by 50%.
- **Agile/DevOps:** Led organization-wide processes to, minimize time in project production phases. Saved \$3.4 million over 5 years. Earned a Lean Six-Sigma Green Belt certification for this initiative.

EDUCATION

University of Illinois at Urbana-Champaign

Urbana, IL

Masters of Science in Electrical and Computer Engineering (ECE)

University Of Michigan

Ann Arbor, MI

Bachelor of Science in Electrical Engineering and Computer Science (EECS)