Hamza Shah

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Education

Bachelor of Science in Computer Engineering *Sep 2022 – Jun 2026*
International Islamic University, Islamabad *Islamabad, Pakistan*

- Relevant Coursework: Programming, Networking, Artificial Intelligence & Machine Learning, Microcontrollers & Processors, System Programming in C, Linux OS, Communication Systems

Technical Skills

Languages & Backend: JavaScript, Python, Bash, Node.js, Express.js

DevOps & Cloud: Docker, Kubernetes, Jenkins, GitHub Actions, Terraform, Azure, AWS

Monitoring & Databases: Grafana, Prometheus, MongoDB, VectorDB, PostgreSQL

Tools: Git, Linux, MQTT, React.js, Next.js

Work Experience

DevOps and Automation Intern *Jul 2025 – Sep 2025*
Software Productivity Strategists, Inc. *NSTP, Islamabad*

- Engineered end-to-end **CI/CD pipelines** using **Jenkins** and **GitHub Actions**, reducing manual deployment effort by **60%** and enabling automated builds across 3+ client environments.
- Deployed and managed cloud infrastructure on **Microsoft Azure** and **IBM Cloud** supporting **3+ live production workloads** with **zero unplanned downtime** throughout the internship.
- Optimized cloud resource provisioning and cost allocation across multiple client projects through right-sizing and automation, contributing to measurable reductions in infrastructure overhead.

Projects

IoT-Based Digital Twin Predictive Maintenance System | *Azure, MQTT, React.js, ML, ESP32* 2025–2026

- Architected an end-to-end **IoT pipeline** integrating **3 sensor types** on ESP32, streaming real-time telemetry to **Azure IoT Hub** via **MQTT**, processed by **Azure Stream Analytics** across 24/7 cycles.
- Achieved **94%+ fault classification accuracy** using a two-stage **ML pipeline** (Isolation Forest + Random Forest); deployed **ONNX-optimized** models on Raspberry Pi for **sub-100ms edge inference**.
- Developed a live **React.js** monitoring dashboard with real-time sensor charts, automated fault alerts, and SHAP-based RUL predictions visualizing equipment health across industrial operational cycles.

Python ETL Pipeline on Azure AKS | *Python, Azure AKS, Docker, Kubernetes, CI/CD* 2025

- Built a **Python ETL pipeline** processing and transforming structured datasets, containerized with **Docker** and deployed on **Azure Kubernetes Service (AKS)** ensuring high availability and horizontal scalability.
- Implemented a full **CI/CD pipeline** using **GitHub Actions** to automate build, test, and deployment stages, reducing release cycle time and enforcing **DevOps best practices** across all environments.

Microservices E-Commerce App on AWS EKS | *AWS EKS, Terraform, GitOps, ArgoCD* 2025

- Architected and deployed a **microservices-based e-commerce application** on **AWS EKS**, provisioning all cloud infrastructure as code using **Terraform** for repeatable and version-controlled deployments.
- Implemented **GitOps** workflows via **ArgoCD**, enabling declarative continuous delivery where every cluster state change was tracked through Git, reducing manual intervention and improving deployment reliability.
- Configured **Kubernetes** namespaces, resource quotas, and auto-scaling policies across **3+ microservices**, improving system resilience and achieving consistent uptime under variable traffic loads.

Deep Packet Inspection (DPI) Engine | *C++, libpcap, Network Security, Wireshark* 2025

- Engineered a high-performance **DPI engine** in **C++** using **libpcap**, parsing packets across **6 network layers** (L2–L7) and classifying **3+ application-layer protocols** (HTTP, TLS, DNS) at line rate.
- Implemented a **4-stage rule-based traffic filtering pipeline** enabling P2P throttling, content filtering, and malware signature detection, achieving **0 false negatives** across TCP and UDP traffic.

Courses / Training

IT Automation with Python — Google 2026
Linux Foundation (LF101) — The Linux Foundation 2025