SHARHAN ALHASSAN MOHAMMED

• +233542747110 • sharhanalhassan@gmail.com • linkedin.com/in/sharhan-alhassan1
• github.com/sharhan-alhassan

CAREER SUMMARY

- Versatile Software Engineer with expertise in Backend, DevOps and SRE with over 6 years of experience architecting and implementing cloud-native solutions, specializing in microservices architecture, Kubernetes orchestration, and high-availability systems.
- Built and scaled distributed systems with agile CICD pipelines that automated 30+ microservices, consistently achieving 99.9% uptime and increasing operational and deployment frequencies by over 30%.
- Expert in multi-cloud infrastructure optimization by successfully implementing advanced auto-scaling solutions, resulting in 50% cost reduction while maintaining robust performance metrics.
- Expert level programming skills in Python, Golang, Typescript, Terraform, and Bash Scripting

CERTIFICATIONS

- AWS Certified Solutions Architect – Professional
- AWS Certified Solutions Architect – Associate

WORK EXPERIENCE

Tiacloud Consult – Accra, Ghana   **September 2023 – Present**
Technical Lead (Development and DevOps)

- Led development teams in building high-performance microservices architecture that seamlessly handles 1000+ concurrent users. Achieved over 99% uptime and reduced infrastructure costs by 40% through efficient resource management with native Kubernetes Horizontal Pod Autocaler (HPA) and external tools such as auto-scaling with Karpenter and Cast AI utilities.
- Orchestrated the adoption of diverse tech stack which includes Redis, PostgreSQL, RabbitMQ, Docker for containerization, and Huey for asynchronous task processing reducing server response time by 50%, ensuring scalability and robust performance.
- Architected a PCI-compliant payment system with zero failures with a robust subscription management and isolated coding environments for customers using cloud-based infrastructure.
- Directed the design of a secure IoT ecosystem integrating blockchain technology for data integrity. Developed a high-performance Flask API for IoT device integration, optimizing data polling and processing.
- Managed a 24/7 on-call support rotation for critical production systems, handling customer escalations and implementing proactive monitoring solutions that reduced incident response time by 30%. Documented technical solutions and created knowledge base articles and references that significantly improved team efficiency.
- Tech Stack: Python, Azure, GitHub Actions, Docker, Python (Django & FastAPI) Kubernetes, Redis, PostgreSQL, Jira Service Desk

Dabafinance Inc – Miami, Florida - United States   **July 2021 – August 2023**
Snr. DevOps Engineer (Remote)

- Architected and deployed multi-environment Kubernetes clusters in a private network in AWS multi-account infrastructure. Leveraged Nginx Ingress controller with a Network load balancer for traffic distribution to microservices which significantly reduced operational cost and management overhead of multiple application load balancers.
- Augmented Kubernetes cluster from native cluster autocaler to Karpentar which drastically reduce cost by 50% while leveraging on suitable nodes for different workloads.
- Implemented a comprehensive monitoring and logging solution with OpenTelemetry (OTEL) collectors and granular ECS-based time-series alerts, reducing incident resolution times by 50% and enabling real-time insights into error logs, system performance, and business logic flows.
- Designed and Implemented a CI/CD pipeline with GitHub Actions to automate image build process, tagging, and deployment of microservices to Kubernetes clusters. Implemented a robust unit tests and integrations tests strategy to probe microservices ahead of deployment which greatly reduced the chances of migrating broken services.
- Improved CI/CD pipeline with external DNS object in Kubernetes clusters to dynamically create ingress hosts together with certmanager for certificates issuance and HPA (Horizontal Pod Autocaler) for high availability and scalability of microservices.
- Tech Stack: Terraform, AWS, Docker, Python, Kubernetes, Bash, Prometheus & Grafana, NRQL, Azure CLI & AWS CLI

CloudFruition Technologies – Essex, United Kingdom (UK)   **Aug 2020 – July 2021**
DevOps Engineer (Remote)

- Designed and fully implemented an isolated VPC that hosted a high-performance distributed file, object, and block storage system using Ceph ansible and Red-hat Ceph. Configured ansible- playbook to provision a Ceph cluster of osds, monitors, managers, and a Grafana server to monitor real-time server metrics of clusters with over 99% up-time
- Architected and deployed a cost-efficient and scalable customer-oriented cloud backup storage system for digital video recorders(DVR) to store and retrieve video footage from a secured and encrypted S3 bucket. Implemented bucket life cycle policies from S3 to Glacier, which reduced storage system's cost drastically to about 50%.
- Architected and configured highly available Prometheus servers to scrape granular time-series metric data from data sources including Amazon EC2 Instances, EKS cluster, EBS volumes, and Application Load balancers, and integrated it with Grafana

server for real-time monitoring and alerting to quicken incidence reporting and mitigation process.
- Designed and deployed a desktop on-demand using Amazon workspaces which leverages Auth/Session Gateway and streaming gateway in a public subnet to connect customers with Microsoft AD service with secured access to the internet via NAT Gateway. The setup and configuration drastically reduced the cost of purchasing new physical machines.
- Tech Stack: Terraform, AWS CloudFormation, Azure, GitHub Actions, Docker, Python, Kubernetes, Bash, Argo CD

RESEARCH AND PROJECTS

LIoTBChain   **April 2024 – Present**
Lead Developer and Maintainer
- Maintainer of a lightweight blockchain-based framework using Python with PostgreSQL integration, featuring customizable mining difficulty, transaction grouping, and proof-of-work mechanisms for both IoT and non-IoT applications.
- Implemented adaptive mining difficulty and transaction grouping algorithms, leveraging PostgreSQL for high-performance data storage and retrieval, ensuring low latency blockchain operations and robust security across distributed systems.
- Available at https://pypi.org/project/liotbchain/

Tokengen   **November 2022 – Present**
Lead Developer and Maintainer
- Developer and Maintainer of tokengen, a CLI tool for automating tokens generation, retrieval, and update between Kubernetes clusters and Azure key vault.
- Available at https://pypi.org/project/tokengen/

Mongodb Tally   **August 2022 – Present**
Lead Developer and Maintainer
- Developer and Maintainer of Mongodb-tally, an open-source tool available on GitHub Actions Marketplace for backing up MongoDB data across mongo clusters.
- Available at https://github.com/marketplace/actions/mongodb-tally

VOLUNTEER ACTIVITIES

Founder and Volunteer, Djangodev-GH   **March 2020– Present**
- Founder of a community of over 200 developers who share great interest in learning Python, the Django web framework, and cloud technologies.
- Regularly host Google meetup tutorial sessions to teach, provide materials, and coach programming enthusiasts in my local community to gain needed skills in the cloud computing, python, and Django web framework.

EDUCATION
University of Ghana   **Accra, Greater Accra**
MSc. Computer Science   **August 2022 – January 2024**

Ashesi University   **Berekuso, Eastern Region**
BSc. Electrical & Electronics Engineering   **Sept 2016 – May 2020**

SKILLS
-