

# Charles Asiamama

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## Personal Statement

Entry-level Software Engineer focused on scalable applications, cloud-native systems, and backend development. Proficient in Go, Python, and TypeScript, with hands-on experience in API development, databases, and web technologies. Dedicated to continuous learning and innovative problem-solving

## Education

<b>Carnegie Mellon University</b> – MS in Mobile and IoT Engineering	September 2021 - May 2024
<b>University of Wisconsin-Madison</b> – Capstone Certificate in Computer Science	June 2019 - August 2021
<b>Western Illinois University</b> – BA in Economics	January 2006 - August 2010

## Skills

**Programming:** Java, Go, Python, C, SQL, Typescript

**Frontend:** React, Tailwind CSS, HTML

**Backend:** Node.js, Gin, RESTful APIs, gRPC, WebSockets

**Cloud & Infrastructure:** AWS (Lambda, EC2, EKS), GCP (GKE, Load Balancing, Cloud Storage)

**DevOps & Automation:** Kubernetes, Docker, Terraform, Ansible, Jenkins

**Databases & Storage:** MySQL, MongoDB, Timestream, Cloud Storage

**Certifications:** GCP Associate Cloud Engineer

## Experience

**Practicum**, SLAC National Accelerator Laboratory – Pittsburgh, PA September 2023 - December 2023

- Designed an AWS-based cloud infrastructure for the TESS platform using event-driven architecture, automating energy data processing with AWS Lambda and AWS Timestream, achieving 99.9% data availability and reducing latency in real-time forecasting to improve grid efficiency
- Engineered an AWS Lambda hot-reloading system with a file watcher for Python code changes, enabling automatic redeployment and real-time CloudWatch logging, reducing debugging time and accelerating development speed

**Cert Workforce Development Intern**, Software Engineering Institute – Pittsburgh, PA May 2022 - December 2022

- Developed a RESTful web application with React, Node.js, and MySQL to automate cybersecurity training workflows, boosting efficiency and user engagement by streamlining processes
- Automated deployment and infrastructure management on Proxmox with Terraform, implementing Infrastructure as Code (IaC) to improve scalability, reduce manual configuration, and enhance system reliability

**Software Quality Engineer I-II**, CDW – Chicago, IL September 2011 - May 2019

- Led the design and automation of 1,200+ test scripts for backend validation and integration testing, leveraging SQL and Unified Functional Testing (UFT), reducing testing time by 30% and improving defect detection by 25%
- Integrated HP ALM and automation tools to implement automated regression testing, streamlining workflows, minimizing manual intervention, and decreasing testing time by 40% while enhancing system stability
- Produced bi-weekly regression test results using Excel and internal dashboards, increasing stakeholder awareness and enabling timely decision-making to mitigate risks

## Projects

**Raft** | Git, Golang, Linux/Unix, Multithreading, Raft Consensus Algorithm, RPCs, TCP/IP

- Created a Go-based Raft consensus algorithm for leader election, log replication, and fault recovery, boosting fault tolerance and resilience in distributed systems
- Built a custom Go-based RPC library for synchronous communication between Raft nodes, ensuring efficient distributed consensus and fault tolerance

**BioInformatics** | React, Typescript, Tailwind CSS, Node.js, MySQL

- Engineered a web-based bioinformatics database with React, TypeScript, and Node.js, integrating MySQL for pathway redesign and data management, improving accessibility and analysis
- Implemented a BFS algorithm to dynamically redesign biological pathways via MySQL queries, optimizing visualization and accelerating user insights

**E-commerce Web-Service** | Golang, Docker, AWS (CloudFormation, EC2, EKS, MongoDB, MySQL)

- Developed a high-performance, scalable e-commerce backend in Go with RESTful APIs, JWT authentication, and microservices using MySQL and MongoDB, optimizing large-scale transaction handling and user experience
- Created fault-tolerant backend services with circuit breakers, bulkheads, and Kubernetes on AWS EKS, enhancing system reliability, resilience, and automating failover processes

**Santorini** | React, Tailwind CSS, Typescript, Node.js, WebSockets

- Built a Santorini-inspired multiplayer board game with React, TypeScript, and WebSockets, using a client-server architecture for modularity and consistent game state
- Implemented a rule-based Santorini game engine in TypeScript, applying Strategy and Decorator patterns to enable dynamic rule modifications and boost maintainability and extensibility

**Cloud Infrastructure & K8 Automation** | Ansible, Jenkins, GCP, Kubernetes, Python, Terraform

- Orchestrated an on-prem Kubernetes cluster on GCP with Terraform, automating VPC networking, compute provisioning, and load balancing to improve availability and scalability
- Streamlined Kubernetes deployment on GCP with Jenkins, Ansible, and Python, simplifying SSH provisioning, cloud backups, and credential management to optimize cluster setup