Mercy Wangui Muiruri

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EDUCATION

Northwestern University **Expected Graduation: June 2027**

Bachelor of Science in Computer Science GPA: 3.77/4.00

Relevant Coursework: Data Structures and Algorithms, Object-oriented programming, Software Design, Distributed Systems, Agile Development, Networking, Operating Systems, Machine Learning, Data Engineering

SKILLS

Languages: Java, Python, Go, C++, JavaScript, C, HTML, CSS, TypeScript, React, SQL, graphQL, Terraform
Cloud & Databases: OCI, AWS, GCP, Kubernetes, Docker, MySQL, Redis, NoSQL Firestore, Postgres,
Infrastructure: REST APIs, Github CI/CD, Git, Jenkins, Spinnaker, gRPC, TCP/IP, Linux/Unix, Artifactory
Frameworks: SpringBoot, Grafana, Radar, Kibana (telemetry), Node.js, Gradle, Maven, Swagger API, Cucumber
AI Tools: Cursor, Claude Code, Copilot, MCPs, Claude Cowork, Gemini, Claude skills, FastAPI

PROFESSIONAL EXPERIENCE

Software Engineering Intern | Netflix **June 2026 – September 2026**

- Built a GraphQL API across 3 microservices for **54K** users by decomposing legacy Groovy monolith functionality into a **Java** query, leveraging Redis for low-latency reads, and **gRPC** to read and write data between microservices architectures
- Designed agentic workflows using specialized **Cursor subagents** for design review and code generation to migrate legacy monolith features to GraphQL/Java microservices, accelerating delivery of new endpoints to less than a week
- Enhanced reliability using **Copilot** agents to verify migrated features using integration tests reducing manual testing effort
- Designed telemetry infra like **Kibana** dashboards, **Radar** alerts & SpringBoot AOP logging for critical payment flows

Software Engineering Intern | Oracle Cloud Infrastructure **June 2025 – September 2025**

- Accelerated test execution by 75% by using **Terraform** to dynamically provision OCI compute infrastructure for canaries
- Released 15+ deployments using **Jenkins** CI/CD pipelines deploying Docker images to multi-region **Kubernetes** clusters
- Engineered 3 **database APIs** consumed by Google Cloud Platform, enabling cross-cloud access to OCI-hosted data
- Defined 20+ MQL **telemetry** metrics powering **Grafana** dashboards, improving reliability by expanding observability
- Configured subnets and Network Security Groups (NSGs) across OCI and GCP by defining network security policies

Data Structures Teaching Assistant | Northwestern **January 2025 – March 2025**

- Graded Algorithms assessments and taught Data Structures to 163 students by collaborating with 15 peers and faculty
- Debugged logic errors in students' code by teaching techniques such as debugging & coding principles like unit testing

PROJECTS

Distributed System Raft Key Value Store | Go **May 2026 – June 2026**

- Developed a distributed key-value system using Raft consensus algorithm to enforce a serializable and consistent log
- Optimized leader election time to **700ms** by using randomized timeouts implemented in **Go** for convergence
- Cut broadcast time by using goroutines to snapshot state and issue gRPCs to workers in parallel restoring lagging followers
- Guaranteed linearizability by synchronizing concurrent access to state with mutexes to prevent races across goroutines

MetaMusic Agentic Audio Software | Fullstack **May 2026 – June 2026**

- Architected an agentic pipeline using Gemini chaining audio feature extraction, analysis, and inference into a single pass
- Reduced latency by 67% using a **RAG** context base built from audio feature vectors and user text improving accuracy
- Implemented React hooks to cut redundant Firestore writes &clean up object URLs on unmount to prevent memory leaks
- Designed a storage API using TypeScript to asynchronously persist metadata to NoSQL Firestore without blocking UI

Document Processing Software | AWS, Python **January 2025 – March 2025**

- Architected a serverless PDF-to-audio application for the visually impaired by integrating AWS Polly for audio compilation, Python + **AWS** Lambda for serverless execution, API Gateway for efficient traffic routing, and S3 for scalable storage
- Persisted metadata in **MySQL** RDS database using ACID transactions preventing partial writes ensuring reliability
- Integrated AI-assisted tools like OpenAI API for natural-language processing condensing content into concise summaries
- Leveraged AWS Polly neural audio models to convert text to speech and Rekognition AI for image classification

LEADERSHIP AND EXTRACURRICULARS

Northwestern Formula Racing Organization | Project Lead **September 2024 – May 2025**

- Directed a 4-person engineering team to design, develop and integrate a telemetry platform to visualize data from all 80 sensors on the car enabling data-driven analysis of car's performance, delivering a fully operational Formula One car
- Deserialized **50,000** binary rows to structured objects using object-oriented Python ORM layer to map car signals