

ZAKARIYE MOHAMED

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EDUCATION

Georgia Institute of Technology | M.S. Computer Science | Admitted | Expected May 2028

Georgia State University | B.S. Computer Science | Major GPA: 3.8 | May 2027

Relevant Coursework: Machine Learning, Data Science, Probability & Statistics, Linear Algebra, Digital Image Processing Algorithms, Data Structures, Software Engineering

TECHNICAL SKILLS

AI/ML: PyTorch, TensorFlow, Keras, Hugging Face, scikit-learn, XGBoost, Optuna, RAG, LLMs, MCP, OpenCV

MLOps: MLflow, SageMaker, TensorBoard, FastAPI, Docker, GitHub Actions, CloudWatch, Modal

Languages & Data: Python, SQL, C/C++, JavaScript, PostgreSQL, Supabase, Polars

Cloud: AWS, Azure, GCP, ECS Fargate, Kubernetes, S3, ECR, SageMaker Endpoints

Certifications: Cornell University Machine Learning Foundations | AWS Certified Cloud Practitioner | Microsoft Certified: Azure Fundamentals (AZ-900)

EXPERIENCE

InComm Payments | Systems Engineer Intern

Sep 2026 - Present

- Support migration and onboarding of InComm Health clients to an SFTP-based batch platform, documenting data-flow requirements and dependencies across enterprise teams.
- Build and validate monitoring alerts for enterprise file workflows to improve reliability, incident detection, and operational responsiveness.

Cornell Tech | AI Engineer Fellow

Apr 2026 - Present

- Built and evaluated neural-network, RAG, and multimodal LLM applications with TensorFlow and Keras across data preparation, model evaluation, and system integration.
- Developed end-to-end AI workflows spanning preprocessing, model experimentation, evaluation, and application integration for applied machine-learning use cases.
- Collaborated with company partners to translate open-ended product requirements into AI features and MCP-based workflows.

IBM | Site Reliability Engineer Intern

May 2026 - Aug 2026

- Built Sentinel, a React/Django/PostgreSQL operations platform used by 50+ engineers/managers, and added Gemini AI incident summaries, troubleshooting recommendations, Jira automation, and live operational context.
- Built an MCP knowledge layer plus correlation-ID tracing across two ELK clusters to centralize SRE context and accelerate production troubleshooting.
- Integrated AI features with production observability data so recommendations and summaries were grounded in live operational signals.

Signify | Software Engineer Intern

Jan 2026 - May 2026

- Built Python/Bash CI/CD automation with Docker and cloud infrastructure, improving development efficiency by 30% and build time by 40%.
- Programmed a BLE Mesh smart-lighting system in C/C++ for real-time control and synchronized device state across networked embedded hardware.

Crescent Technology | AI Engineer Intern

Jul 2025 - Dec 2025

- Built a production RAG pipeline that reduced hallucinated responses by 80% and cut chatbot latency from 11-13 seconds to under 4 seconds.
- Engineered context-aware conversational memory with expiration, reducing token usage by ~20%; built MCP agent workflows for lead capture, intent routing, and escalation across hundreds of user sessions.
- Deployed AI microservices on AWS using Docker and REST APIs, supporting production inference and real-time application workflows.

PROJECTS

Multimodal Emotion Model | BERT, OpenCV, FFmpeg, SageMaker, TensorBoard

- Trained a late-fusion model on MELD across video, audio, and text; built preprocessing pipelines for frames, audio features, and BERT embeddings.
- Launched training on AWS SageMaker, logged experiments with TensorBoard/CloudWatch, and deployed inference through SageMaker Endpoints.

Housing Price MLOps Pipeline | XGBoost, Optuna, MLflow, Polars, FastAPI, ECS Fargate

- Trained XGBoost with 15-trial hyperparameter optimization, outperforming Ridge/Lasso baselines; tracked experiments and model versions in MLflow.
- Served predictions with FastAPI/Streamlit and deployed 2 ECS Fargate services through GitHub Actions CI/CD.

Audio CNN Sound Classifier | CNN, ESC-50, Mel-spectrograms, MixUp, Modal

- Built a residual CNN for environmental sound classification, engineered Mel-spectrogram features, applied MixUp augmentation, and executed GPU training in the cloud.

Multi-Node ML Systems Homelab | Proxmox, Kubernetes, Docker, NVIDIA GPU, MLflow, Prometheus, Grafana

- Built a multi-node ML platform for local LLM training, distributed execution, model tracking, GPU-backed experimentation, and centralized observability.

LEADERSHIP & OPEN SOURCE

ColorStack | Co-founded the GSU chapter supporting Black and Latinx CS students through technical and career programming.

Open Source | Contributed 13+ pull requests across 10+ repositories focused on infrastructure, automation, and developer tooling.

Shakur Heating and Air | Led technical operations and digital systems for a residential HVAC business.