Zakaria Mohamed

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EDUCATION

University of Minnesota – Twin Cities, College of Science and Engineering — Minneapolis, MN
Bachelor of Science in Computer Science — Dec 2025
Relevant Coursework: Software Engineering, Database Systems, Operating Systems, Computer Architecture, Program design
Cumulative GPA: 3.6/4.0 | Dean's List, 4 semesters

RELEVANT PROJECTS

FightIQ — MMA Fight Prediction Platform *(Python, FastAPI, Next.js)* — *Sept 2025 – Present*

Live: https://fight-iq-omega.vercel.app/

- Architected a production-grade FastAPI REST API with strict Pydantic validation and centralized exception handling, improving request reliability under invalid inputs.
- Implemented model explainability layers that convert raw prediction probabilities into structured, human-readable insights, improving transparency of ML-driven decisions.
- Designed a modular FastAPI backend and containerized the service with Docker, enabling reproducible builds and deployment-ready infrastructure.
- Built a responsive Next.js frontend to visualize fight statistics and inference results for end-to-end system validation.

Drone Delivery Simulator *(C++, Design Patterns, Algorithms, Docker)* — *Jan 2025 – May 2025*

- Built a multi-agent drone delivery simulation in C++, owning the design and implementation of autonomous behavior and coordination logic within a shared team codebase.
- Applied Strategy, Observer, and Factory patterns to design modular, extensible systems, enabling independent feature development and clean cross-team integration.
- Collaborated in an industry-style workflow using Git, pull requests, code reviews, and Jira to track tasks, resolve integration issues, and deliver a cohesive final system.

PROFESSIONAL EXPERIENCE

Target *(via Genesys Works)* Technical Intern | Self-Checkout Computer Vision (TruScan)

Brooklyn Park, MN | September 2021 – August 2022

- Executed large-scale data preprocessing for TruScan's production computer-vision pipeline, curating and validating 10,000+ annotated images supporting real-time retail loss-prevention models deployed across hundreds of Target stores.
- Engineered high-value training data by identifying and annotating critical edge cases (e.g., occluded handheld scanners), improving model generalization on real-world retail camera feeds.
- Standardized complex image annotations through rigorous labeling protocols, reducing ambiguity and strengthening ground-truth consistency for downstream model accuracy and robustness.

LEADERSHIP AND ACTIVITIES

Leadership: Member, National Society of Black Engineers (NSBE) & 0-1 Startup Club; Brazilian Jiu-Jitsu Mentor.

SKILLS

Languages: Python, TypeScript, JavaScript, C, C++, Java, SQL
Backend & Systems: FastAPI, REST APIs, Docker, PostgreSQL, Kubernetes (conceptual)
Frontend: React, Next.js, Tailwind CSS
Tools & Workflow: Agile, Git, Jira, Code Reviews, Vercel