

Mustafa Akilli

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EDUCATION

Delaware State University

Dover, Delaware

Bachelor of Science in Computer Science, GPA: 3.87

Expected graduation: May 2027

Relevant coursework: Operating Systems, Database Systems, System Architecture, Data Science, Software Engineering

Certifications: Microsoft Agent-a-thon: Building AI Agents, Braven Leadership/Career Accelerator, CodePath Data Structure & Algorithms

Awards: 3x hackathon winner \$3000+ prize earnings, Microsoft Agent-a-thon & AI Innovation Venture Finalist by AWS, 4x Presidents List

WORK EXPERIENCE

SignalDeck

Remote

Software Engineer Intern - Fintech Startup

July 2026 - September 2026

- Corrected Backtester correlation by aligning daily P&L on shared trading dates and fixing correlation heatmap rendering, verified with 63 pytest, 117 Jest, and 6 Playwright E2E tests.
- Debugged full-suite test failures by reproducing them on clean release baselines, proving shared FastAPI and test-harness issues caused the failures rather than my Backtester changes.
- Architected Backtester-to-Scanner forward testing across FastAPI, MySQL, AWS ECS/Fargate, Lambda, and automated workers, defining safeguards for authorization, idempotency, and failure isolation.

Delaware State University | National Science Foundation

Dover, Delaware

Research Intern - Computer and Information Science and Engineering

June 2026 - August 2026

- Researched wildfire remote sensing and built a scalable Python/PyTorch deep learning pipeline using before-and-after NASA HLS satellite imagery across 28 U.S. wildfires to generate pixel-level impact maps for rapid post-fire assessment.
- Curated and quality-controlled a 28-fire geospatial dataset, using NASA HLS quality masks and Rasterio/GDAL to filter contaminated imagery, validate raster alignment, and prepare reliable data for model training and evaluation.
- Built a full-stack geospatial AI application with React/Vite, MapLibre, FastAPI, and Amazon Bedrock, enabling interactive wildfire map comparison, model-result analysis, AI-assisted explanations, and GIS-ready exports.

Extern | Pfizer

Remote

AI Engineer Extern - AI-Powered Document Insights & Data Extraction

June 2026 - August 2026

- Developed an AI-powered pharmaceutical document intelligence system in Python using OCR, NLP, and RAG to extract, classify, and search supplier documents, supporting compliance review and identification of outdated documentation.
- Automated multi-page PDF extraction using PyMuPDF, pdfplumber, OCR, and regex to identify vendor names and compliance dates, then structured the extracted data with pandas for document review.
- Built a LlamaIndex RAG pipeline to search pharmaceutical document sets and answer document-specific questions, tuning chunk size, overlap, and metadata filters to retrieve more relevant context for the LLM.

PROJECTS

PictureMe | HornetHacks 2026 | 1st Place | \$2000

Dover, Delaware

Full Stack Developer | React, Vite, FastAPI, Supabase, PostgreSQL, AWS Rekognition, Cloudinary

April 2026

- Developed PictureMe, a full-stack event photo platform used by 50+ users to transform large galleries into personalized photo collections through private event access and AI face recognition.
- Built an automated cloud AI facial recognition pipeline using AWS Rekognition API integration and 3–5 user enrollment selfies to retrieve relevant images from galleries of up to 1,000 photos, cutting manual browsing effort by ~90%.
- Implemented privacy and scalability features including QR-based event entry, authentication, role-based authorization across 3 user types, and automatic 30-day data retention, reducing long-term storage and face-index retention costs by 70%.

Smooth Cruize | HenHacks 2026 | 1st Place | 45+ Universities | 470+ Participants

Newark, Delaware

Full Stack Developer | Python, FastAPI, Next.js, YOLOv8, OpenCV, PostgreSQL, TypeScript

March 2026

- Led a team to 1st place at HenHacks 2026 by developing Smooth Cruize, a full-stack computer vision platform that automates pothole detection using dashcam footage.
- Engineered a Python and FastAPI backend integrating a fine-tuned YOLOv8 object detection model and OpenCV to process road video, detect hazards, and automatically generate 3-5 second contextual evidence clips for review.
- Developed a responsive Next.js frontend and integrated Supabase for database management, providing city maintenance teams with an actionable dashboard to review road hazards with support for GIS-informed maintenance.

TECHNICAL SKILLS

Languages: Python, Java, JavaScript, TypeScript, C++, C, C#, Go, SQL, HTML, CSS

Frameworks & Tools: React, Vite, Next.js, Node.js, REST APIs, Streamlit, Flask, FastAPI, Git, Github, Gitlab, Docker, Gradio, PySerial

AI/ML: PyTorch, Computer Vision, NLP, LLMs, RAG, OpenCV, YOLOv8, LlamaIndex, OCR

Data & Cloud: Pandas, NumPy, PostgreSQL, MySQL, NoSQL, Redis, AWS, AWS Rekognition, GCP, Cloudinary, Rasterio/GDAL