MAXIMUS ADEOLA

Full-Stack Software Developer: AI and Data Analysis

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SELECTED PROJECTS

Un-LOCC: Universal Lossy Optical Context Compression

AI Researcher & Developer

📅 2025 – Present   📍 Personal Research

- Developed a context compression technique achieving nearly **3:1 token compression at 93%+ retrieval accuracy** by rendering text as images for Vision-Language Models, inspired by DeepSeek-OCR research paper.
- Designed the **"Optical Needle in a Haystack" (O-NIH) evaluation framework** to quantify VLMs' interpretability of compressed text.
- Conducted **90+ experiments** across 6 models (Qwen, Gemini, Phi-4, Llama-4, UI-TARS), optimizing font families, font, color contrast, and image resolutions.
- Achieved impressive results: **2.8:1 compression @ 93.65% accuracy** (Gemini Flash-Lite), **2.2:1 @ 94.44%** (Qwen 72B), demonstrating plug-and-play viability for drastically extending effective context length and reducing VLM operational costs.
- Gained rapid traction: **44 stars within 48 hours**, placing the project in roughly the **top 0.33% of all GitHub repositories** (811K of 245M+).

FlashySurf: Advanced, Open-Source Passive Study Tool

Creator & Lead Developer

📅 2025 – Present   📍 Chrome Web Store

- Built a browser extension that turns passive browsing into spaced-repetition drills; grew to **200+ weekly active users** with over **50k+** cards answered.
- Implemented **semantic clustering + spaced repetition** to target weak topics; **multiple user reviews** show a 60 - 150 SAT point improvement.
- Shipped v2 end-to-end (design, implementation, QA) over **200 hours**.

pressurize.js: JavaScript Library

Creator & Publisher

📅 2025   📍 NPM

- Engineered and published a **first-of-its-kind JavaScript library** to derive a normalized **0–1** "pressure-like" value from mobile accelerometer/gyroscope. Expanding pressure sensing capabilities to most mobile devices.
- Developed a simple a rolling **median** stabilizer for real-time inputs; solving a unique problem for web developers and achieving **108 weekly downloads** on npm.

Freshly-Baked-AI: Custom AI Framework

AI Architect

📅 2025   📍 Personal Research

- Built a unique AI framework from scratch using an architecture based on polynomial layers and a simple evolutionary algorithm.
- Learned and implemented Horner's method for polynomial evaluation and Numba JIT compilation to optimize performance.

MY PHILOSOPHY

"The next time I see a glass wall, I won't just smash my head against it. I'll see it for what it is: a problem waiting for a solution. And then I'll build the tool to shatter it."

MOST PROUD OF

FlashySurf Creator
Built and continuously maintained an advanced passive learning tool from scratch, growing it to 100+ users and solving my own study challenges.

Un-LOCC Researcher & Creator
Developed a unique text-compression method for vision-language models; gained strong community traction, reaching top 0.3% of all GitHub repos within 48 hours.

pressurize.js Innovator
Published a first-of-its-kind JavaScript library for pressure detection on standard mobile devices.

Community Impact
Assisted instruction stem camps. Proactively diagnosed and repaired equipment, including 3D printers and pens, preventing downtime and reducing costs.

TECHNICAL SKILLS

Languages

Python · JavaScript · Java · HTML/CSS · Lua

AI & Machine Learning

TensorFlow · PyTorch · NEAT · NLP · LLM · Evolutionary Algorithms

Web Development & Tools

Svelte.js · React.js · Node.js · Git/GitHub · Linux · NPM · PRAW

CREATIVE PURSUITS

Musician & Composer
Performer in a band for audiences of 700+ YouTube channel with 12,000+ views. Guitarist & Bassist of High School Jazz Combo.

Digital & Traditional Artist
4+ years experience in digital art, graphite, charcoal, and painting.

LEADERSHIP & WORK EXPERIENCE

Junior Counselor & Technical Lead
Practicali Kids (Howard County Rec & Parks)

📅 June – Aug 2025　　📍 Howard County, MD

- Served as a technical expert for 3D Printing and LEGO Robotics camps, mentoring campers aged 6-15 in engineering and design principles.
- Independently diagnosed and repaired the camp's 3D printer on multiple occasions, leveraging 2+ years of personal experience to prevent downtime and save on external repair costs.
- Demonstrated initiative by voluntarily repairing camp equipment like 3D pens off-hours to ensure a seamless experience for all participants.

Puzzle Master & Officer
Marriotts Ridge CS Club

📅 2024 – Present　　📍 Marriottsville, MD

- Proactively solved a club logistics problem by designing and deploying a hub on the club website for meeting resources, significantly improving accessibility for all members.
- Secured **1st place** in a club-wide Kahoot-style coding competition against officers and the club advisor.

Junior Instructor (Paid, Seasonal)
IDEA Lab Kids – Howard County

📅 2023 – 2024　　📍 Columbia, MD

- Supported high-energy birthday STEAM events for ages 6–12; managed flow/timekeeping for **12–30** kids and provided occasional solo room coverage.
- Prepped and reset spaces open-to-close: décor/LEDs, table layouts, celebrant boards, waiver **iPad**, sanitation, and orderly parent pickup.
- Improved operations by reorganizing inventory (batteries/bins) and troubleshooting A/V (Bluetooth speakers, playlists) to reduce setup friction.

Robotics Teaching Assistant
Jesus House Baltimore Church

📅 Summers 2023, 2024　　📍 Baltimore, MD

- Mentored 30+ students (ages 6-9) in robotics, teaching programming logic, engineering principles, and debugging strategies using MakeBlock mBot2 robots.
- Developed a Socratic teaching style to foster independent problem-solving skills, guiding students to discover solutions through targeted questioning rather than direct instruction.

EDUCATION

Marriotts Ridge High School
Expected 2026

📅 Marriottsville, MD

- **AP Computer Science A Exam:** Score 5/5
- **AP Calculus Exam:** Score 5/5
- **SAT Exam:** Score 1480/1600 (Top 1%)
- **AP Physics C Exam:** Score 3/5
- **Carrer Academies:** Computer Science, Computer Programming

AWARDS & CERTIFICATIONS

🏆 **1st Place, MRHS Programming Hackathon**
Developed a beach locator tool for trip planning using APIs to pool together review and weather data.

🏆 **1st Place, CS Club JuiceMind Competition**
Won a Kahoot-style coding quiz against club officers and instructor.

🏆 **3rd Place, QuHacks 2023**
For developing an AI-powered music training application using Python and Spotify Basic Pitch.

✸ **IT Specialist: Python**
Score: 936/1000 — Top 3 in school (2nd place for most of the year).

✸ **IT Specialist: Java**
Score: 855/1000 — Demonstrated strong Java programming skills.

ADDITIONAL HACKATHON PROJECTS

</> **QuHacks 2025 (Held in 2024)**
Built a developer networking platform to find programmers based on location, skillset, and other factors. Despite losing a valuable team member.

</> **Hack the Nest 2024 - BackendZero**
Worked with a team to build a serverless IaaS platform that lets frontend apps securely connect to external APIs without backend code.

</> **Hack the Colleceum - DolInvest**
Worked with a team to build a stock analysis and visualization platform that provides historical data, price trends, and AI-powered investment recommendations through a web and command-line interface.