

Musa Alanssari

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PROFESSIONAL SUMMARY

Software Engineer & Computer Science Student with experience in full-stack development, cloud infrastructure, and OTT streaming. Proficient in Python, FastAPI, React, AWS, and Roku SceneGraph. Built Serverless pipelines, real-time media systems, and production applications across academic, research, and contract environments.

SKILLS

- **Languages & Frameworks:** C++, Swift, Python, Java, C#, BrightScript, SceneGraph, SQL, HTML/CSS, Flask, Node.js
- **Platforms, Tools & Concepts:** AWS (S3, CloudFront, Lambda, IVS, IAM), Serverless Architecture, CDN Orchestration, Git/GitHub, Linux/WSL, REST APIs, JSON, SDLC, OOP, Data Structures & Algorithms, OTT Development

EDUCATION

University of Houston-Downtown | B.S. in Computer Science | **Expected Graduation:** December 2026 | **GPA:** 3.08

Relevant Coursework: Operating Systems, Software Engineering, Databases, Cryptography, Artificial Intelligence, Parallel Computing, Software Security

- **Undergraduate Research:** Affective Computing & Human-Computer Interaction (HCI)
Development of a proprietary algorithm to quantify cognitive load and affective states through passive computer input patterns.
- Analyzing Keystroke Dynamics, Cursor Path Optimization, Screen Time, and AI facial recognition patterns to identify biometric signatures correlating to high-focus vs high-stress mental states.
- Engineering a custom stochastic model to translate raw input frequency and latency into a Cognitive Flow Score (CFS) in correlation with self-reported user data.

PROJECTS

CognitiveFlow VS Code Extension

January 2026 – Present

- Engineered a Human-Computer Interaction (HCI) tool using TypeScript and VS Code API to analyze cognitive focus, aiming for a 10% reduction in task completion time.
- Designing and implementing a backend scoring engine (FastAPI + TypeScript) that analyzes real-time keystroke and cursor data to generate cognitive focus metrics.

Team Leader of MRA Maintenance App – Mobile Web App

August 2025 – December 2026

- Architected a vehicle maintenance tracking web application using React and FastAPI, deploying a PostgreSQL backend via Gunicorn to support secure role-based access and real-time CRUD operations.
- Led cross-functional team by delegating backend, frontend, and security tasks while coordinating UI integration.

Machine Learning Engineer – Facial Recognition & Item Identifier

May 2023 – August 2023

- Implemented real-time face tracking + object ID in Python (OpenCV, TensorFlow) achieving 90%+ accuracy.

RELEVANT EXPERIENCE

Contract Full-Stack Developer | Mares Manor Urban Farm Foundation

March 2026 – May 2026 | Houston, TX

- Architected a 6-page responsive web platform using Next.js, React, and Tailwind CSS, engineering secure API routes to integrate Stripe Checkout and Formspree for automated donation and volunteer workflows.
- Fortified application security by implementing Cloudflare Turnstile spam protection, strict server-side input sanitization, origin checks, and request validation to protect sensitive donor data.
- Designed a custom UI component library featuring mobile-optimized navigation, achieving perfect 100/100 Lighthouse scores for Accessibility and Best Practices, and a 90 Performance score with zero Cumulative Layout Shift (CLS).

Software Developer (Contract) | Contract Client (Roku Platform)

January 2026 - Present | Houston, TX

- Architected a production OTT channel using BrightScript/SceneGraph, with 400+ concurrent users and sub-500MS latency.
- Integrated AWS IVS and CloudFront edge caching for live sports distribution, supporting 100+ concurrent users with ultra-low latency playback and increasing viewer engagement by 30%.
- Built a serverless media pipeline using AWS Lambda (Python) to process assets such as FFmpeg thumbnail generation & JSON metadata injection to S3, automating over 100 videos and 12 live events, and reducing workloads by 20%.

Northwest Educational Center

Houston, TX

Technical Instructor & Systems Administrator

October 2025 - Present

- Sole IT technician for campus network with 50+ workstations; handled deployment, troubleshooting, and maintenance.
- Designed and taught curriculum connecting hardware input and low-level encoding to software execution.
- Built a virtual check-in for a community event, maintaining a database for over 3,500 assets reducing check-in time by 8 hours.

UbreakIfix

Tomball, TX

Manager

June 2024 – August 2024

- Reduced average turnaround time by 15% by streamlining repair processes.
- Improved first-attempt repairs contributing to a 30% decrease in inventory shrink.