

Youssef A.

AI Engineer

Detroit, MI, United States | [LinkedIn](#)

AI Engineer & Full Stack Software Engineer with 3+ years building production-grade systems — from distributed backend infrastructure at General Motors to AI-powered applications at Gauntlet AI.

I'm passionate about solving complex engineering challenges through clean architecture, intelligent automation, and cutting-edge AI tooling. My background spans backend microservices (Java, Spring Boot, Node.js), cross-platform mobile apps (Flutter, Firebase), and applied AI (RAG pipelines, LLM programming, computer vision).

Current tech stack: Java · Spring Boot · Node.js · Python · React · Flutter · Firebase · RAG · LLMs

Check out my featured projects and GitHub below to see what I've been building.

EXPERIENCE

AI Software Engineer - LLMs

Apr 2026 — Jul 2026

Pam

Built LLMs for a voice AI platform used by 500+ auto dealerships. Translated dealership-specific requirements into production voice AI behavior and built a personal agentic ticket-resolution harness that tripled engineering support throughput and translated dealership-specific requirements into production voice AI behavior.

AI Engineer

Feb 2026 — Apr 2026

Gauntlet AI

Austin, Texas Metropolitan Area

Selected into a fellowship with a <1% acceptance rate to build production-grade AI at startup speed. Shipped 10 production AI systems, agents, RAG pipelines, and automated workflows.

Operations Coordinator

Nov 2024 — Jan 2026

UMMA

Southfield, Michigan, United States

Led operations for UMMA: volunteer systems, event management, Notion knowledge bases, community initiatives. Planned and executed 14 flagship events in one month (1,000–2,000+ attendees) plus monthly events, coordinated 300+ volunteers, and led a \$60K+ 2-week volunteer fundraising campaign. Built a custom volunteer and management platform to power all events.

Backend Software Engineer

Oct 2023 — Feb 2026

General Motors

Detroit, Michigan, United States

Developed distributed backend infrastructure and microservices to support millions of annual OTA (Over-the-Air) updates, ensuring high availability and system stability at scale.

Software Engineer

Aug 2021 — Jan 2022

StrykePay

Built StrykePay's two-app Flutter ecosystem end to end on the client side, integrating REST APIs, WebSockets, and secure banking services to power real-time purchase and refund flows. Improved transaction efficiency by 20% and cut required user input by 50%.

EDUCATION

University of Florida

Jan 2019 — Jan 2023

Bachelor of Science - BS in Computer Science

Completed a Bachelor of Science in Computer Science with coursework spanning algorithms, data structures, operating systems, software engineering, computer vision, and AI. Led development teams, built full-stack and cross-platform applications, and collaborated with industry and academic partners on real-world projects.

Georgia Institute of Technology

Jun 2027

Master of Science in Computer Science

Hayah International Academy

IB Diploma

PROJECTS

Exquizit - AI Powered Assessment Generation

- Developed "exquizit", a REST API leveraging AI to transform any text into an assessment, complete with comprehensive data management endpoints.
- Crafted a comprehensive Software Architecture Diagram, visually representing the structure, components, and relationships within the software system.
- Designed user interfaces, encompassing wireframes, information architecture, and graphical user interfaces (GUI) to enhance front-end user experience.
- Built a cross-platform frontend using Flutter, interfacing seamlessly with the REST API to offer an intuitive study tool for users.
- Authored thorough documentation for the REST API and actively contributed to overall project documentation from

initiation to delivery.

- Led the development and project management efforts, delegating tasks and setting milestones in an AGILE framework.
- Played a pivotal role in demo presentations, showcasing the project's capabilities and features to stakeholders.
- Collaborated with Educational Technology professors at the University of Florida, aligning the project with educational goals and planning its trajectory.
- Demonstrated leadership as both lead developer and project manager, ensuring timely and quality delivery.

Advanced Memory Management & Allocation System in C++

- Developed a Custom Memory Manager Application in C++, incorporating initialization, tracking, allocation, and deallocation functionalities.
- Demonstrated expertise in memory handling, ensuring no memory leaks, and integrated the manager into a console application for robust testing.
- Established the manager with custom allocator, native word size, and implemented "best fit" and "worst fit" memory allocation algorithms.
- Enabled state logging with POSIX calls and provided utilities for memory hole information, allocation status, and other key metrics.
- Achieved memory initialization without relying on standard library functions and employed Valgrind for comprehensive memory leak testing.
- Authored a detailed report on the memory manager's implementation, created a professional screencast showcasing the functionality.
- Packaged the project for easy compilation, ensuring adherence to C++17 standards and successful compilation with standard commands.

Task Manager API

- Conjoined a REST API System using MongoDB, Node.js, and Express.js to act as a database for user task management.
- Applied data validation, sanitation, filtering, pagination, and sorting to produce an efficient and organized system.
- Generated application authentication features, and file uploads, and integrated an email-sending service.

Custom Log Level System Calls

- Created a system call in Reptilian along with static library functions that allow the system call to be invoked from a C API. These custom system calls get and set custom process log levels that sit atop the standard Linux kernel's diagnostic message logging system and allow processes to submit log entries along with a log level.
- Added testing harness functions used to verify the security of the system calls from the system library.

LearnBlox

- Utilized AGILE Methodologies over the course of 2 months to build an educational top-down game using Unity and C# with socketing for multiplayer features, as well as Firebase and dashboard integration.
- Unit tested over fifteen features by writing test scripts, working together with the development team, and analyzing the test results.

Diet Seeker

- Designed and implemented an application that analyzes a public database of food items for nutritional information with a connected directed weighted cyclic graph and tracks and suggests foods to a user based on provided data with C++.
- Implemented Dijkstra's search algorithm and depth-first search for the creation of a diet recommendation feature, based on a user's dietary preferences and food selections.
- Created a search feature that uses Breadth-First Search to traverse the graph and find matches for food, resulting in an $O(V+E)$ time complexity.
- Developed a web service client to communicate with a RESTful web service via CPPREST, and JSONCPP to read and parse stored data.

Physipal (Stanford Treehacks 2021)

Collaborated on and built Physipal, a fitness application that connects individuals through two major approaches: community and competition using Flutter and Dart. The app allows users to search through groups nearby that share similar fitness interests to themselves, users are better connected to those who they can relate to. Challenges on the app can be hosted by anybody, and they can be set to either public or private. Apart from designing and coding the front-end and framework of the application using Flutter and Dart, I connected the application to a variety of Google Cloud Products including Firebase to handle authentication, real time location, and general data.

CERTIFICATIONS

Six Sigma Green Belt (CSSGB) , General Motors	Aug 2024
Project Planning: Putting It All Together , Google	Dec 2023
Project Initiation: Starting a Successful Project , Google	Sep 2023
Foundations of Project Management , Google	Aug 2023
Software Engineer Virtual Experience Program , Goldman Sachs	Jul 2022

SKILLS

DevOps · Full-Stack · Software Development · Google Cloud · Vector Databases · OpenAI API · Systems Design · Tailwind CSS · NestJS · Continuous Integration and Continuous Delivery (CI/CD) · Microservices · GraphQL · PostgreSQL · Next.js · Large Language Models · Prompt Engineering · Natural Language Processing · Machine Learning · Amazon Web Services (AWS) · Git · Docker · TypeScript · Retrieval-Augmented Generation (RAG) · Deterministic LLM Programming · Agentic AI Development · Agentic Workflows · LangChain · Langsmith · Lean Six Sigma · Software Process Management · Kubernetes · Spring Boot · Kafka · Microsoft Azure · Redis · SQL · Computer Vision · Optical Character Recognition (OCR) · React.js · Documentation · Technical Presentations · Public Speaking · Event Planning · Event Management · Coaching · Algorithm Development · Memory Management · Software Documentation · C (Programming Language) · Linux Kernel