

Eman Sarah Afi

Computer Engineer — Software Engineering Master's Graduate

📍 Location: San Diego, CA & Tunis, Tunisia

LinkedIn: linkedin.com/in/emansarahafi

✉️ Email: emansarahafi@gmail.com

📞 Mobile (TN): +21620112182

📞 Mobile (US): +1 (858) 758-5158

GitHub: github.com/emansarahafi

EXECUTIVE SUMMARY

Motivated Computer Engineering graduate (AUBH) with a Master's in Software Engineering (MedTech). Passionate about applying technical knowledge to real-world projects, developing innovative solutions, and advancing professional growth in the engineering and technology industry.

EXPERIENCE

ACTIA Engineering Services

Graduate Research Intern

Ariana, Tunisia

Feb 2025 – Jun 2025

- Presented at the 2025 IEEE International Conference on Emerging Trends in Engineering and Computing (ETECOM); publication to appear in IEEE Xplore.
- Developed a **Python-MATLAB** system for seamless manual-autonomous vehicle control using the **CARLA** simulator.
- Created a real-time **MATLAB** dashboard with multi-sensor visualization, **fuzzy logic**, and **FDIR** for safe, context-aware vehicle operation.

Summer Research Intern

Jul 2024 – Aug 2024

- Published in the 8th EAI International Conference on Intelligent Transport Systems (INTSYS 2024); included in Springer Nature proceedings.
- Proposed a dual-chain framework for adaptive video bitrate allocation in multi-camera ROVs, optimizing transmission under bandwidth constraints.
- Evaluated the system using the **nuScenes dataset**, simulating real-time sensor fusion and streaming for realistic autonomous navigation.

Savy

Manchester, UK

Software Engineer Intern

May 2024 – Oct 2024

- Developed a **Zoho SalesIQ** chatbot & connected it to a **React Native** mobile application to manage UK taxes.
- Integrated Savy's website via **Zoho Sites**.
- Updating the admin dashboard to trace the HMRC status to the users.

American University of Bahrain (AUBH)

Riffa, Bahrain

Student Teaching Assistant

Mar 2023 – May 2023

- Assisted in executing during Spring 2023 the Software Design and Engineering Lab (CMPE 460/L) course.
- Conducted tutorials & labs.
- Graded and provided feedback for homework, assignments, and projects.

TASHFEEN Engineering Solutions

Tunis, Tunisia

Software Engineer Intern

Jun 2022 – Aug 2022

- Worked on developing a **Python Tkinter** surveying application called GuideForm.
- Developed the online platform with **HTML, CSS & PHP** to showcase the survey, company & the visualized data.

EDUCATION

South Mediterranean University

Tunis, Tunisia

Master's in Software Engineering

Sep 2023 – Jul 2025

- Awarded Best Capstone Project Award in the Master's of Software Engineering 2025 Cohort.
- Honor's List (Fall 2023) and Dean's List (2024/2025) Student.
- Member of GDG on Campus SMU and IEEE SMU Student Branch.

American University of Bahrain (AUBH)

Riffa, Bahrain

Bachelor of Science in Computer Engineering

Sep 2019 – May 2023

- Partial scholarship (45%) and Dean's List student.
- Represented university in Jaguar Land Rover Bahrain Young Creatives Initiative (2019) and presented posters on Machine Learning & Mobile Programming, 2021–2022.
- Marketing Member & Project Management Team Leader at AIESEC in Bahrain and IEEE AUBH student branch founding member.

PROJECTS

LyricGen

Python, NLP, Transformer Architecture

 GitHub Link

- Designed & implemented an AI-powered lyric completion tool based on the **Transformer architecture** built from scratch.
- Trained the model on a large dataset of song lyrics to learn contextual patterns and generate meaningful line completions.
- Handled ***data preprocessing, tokenization, and positional encoding*** to optimize training.

EcoEats

MERN Stack, REST API, MongoDB, GitHub

 GitHub Link

- Developed a full-stack food waste web app for restaurants to sell surplus food.
- Built backend with ***Node.js, Express.js, MongoDB*** and frontend with ***React.js***.
- Deployed on ***GitHub*** for open-source collaboration.

PUBLICATIONS

Afi, E.S., Triqui, O., Sayahi, S., Besbes, H., Tlili, F. (2025). **Adaptive Video Bitrate Allocation for Remotely Operated Vehicles (ROV)**. In: Kocian, A., Milazzo, P., Henriques Martins, A.L., Nanni, M., Pappalardo, L. (eds) Intelligent Transport Systems. INTSYS 2024. Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering, vol 608. Springer, Cham.
https://doi.org/10.1007/978-3-031-86370-7_21

Afi, E. S. (2023). **Development of a Smart Crop Monitoring System** (Version 2). American University of Bahrain. <https://doi.org/10.58014/aubh.24314056.v2>

TECHNICAL SKILLS

Languages: Java, Python, MATLAB, C/C++, SQL, JavaScript, HTML/CSS, PHP, Swift & Kotlin.

Frameworks & Libraries: React, Node.js, SwiftUI, JUnit, JavaFX, Pandas, NumPy, Matplotlib & Tkinter.

Developer Tools: CARLA, Git, Docker, Kubernetes, Google Cloud Platform, VS Code, Visual Studio, Eclipse & Firebase.

Hardware: Raspberry Pi, Arduino, ESP32, VHDL & Assembly.