

# Ziad Hussien Al-Amiir

Deep Learning Engineer, Computer Vision

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Master's student, experienced deep learning engineer specializing in computer vision techniques applied to medical data, and certified TensorFlow developer with a background in academic research.

## Experience

### Deep Learning Researcher (PhD Collaboration) | [Paper](#) Freelance

Aug. 2023 – Dec. 2024

- Conducted research in deep learning, developing innovative models for segmenting brain tumors from MRI images, achieving a 2.5% improvement in accuracy over benchmark models.
- We developed different models for segmenting brain tumors from MRI images.
- Designed and implemented advanced architectures like U-Net and U-Net++ to enhance model performance.
- We evaluated our model with different evaluation metrics (DOC, F1-score, ROC, etc.).
- Authored a research paper comparing our models with related works, demonstrating superior performance metrics in segmentation tasks.

Contact: [CHAHBAR Fatma](#)

### Software Developer (Backend Developer Internship).

Jan. 2021 – Jan. 2023

**Aswan Healthcare (Magdy Yacoub) Foundation**, Largest Heart Foundation in the Middle East and Africa.

- Developed and deployed a modular patient management system using the Sanic framework.
- Designed and implemented user-friendly interfaces for registering new patients and managing staff accounts.
- Organizing the system in module pattern to make it expandable.
- Led the development of an automated file tracking method, streamlining inter-departmental communication and reducing response time in emergency cases.

## Education

### Master of Science in Computer Engineering (Specialization: Artificial Intelligence)

Aswan University, Aswan, Egypt

Expected Graduation: Dec 2026

- Coursework: Artificial Neural Networks, Advanced Programming Language (Python), Engineering Mathematics, Numerical Analysis and Technical Writing.
- Research: Building 3D models and segmentation for tetralogy of Fallot patients using deep learning methods.

### B.Sc. – Computer Engineering - (Very Good with honors rank – 79.57%)

Sep. 2018 – Jul. 2023

**Aswan University**

#### Graduation Projects:

##### • Driver Monitoring System

July. 2023

Developed a system for monitoring the drivers to avoid drowsiness by detecting his/her state while driving using IR camera and different cutting edges.

- I joined as a deep learning engineer on this graduation project. We used different CNNs, LSTM, and GRU models to detect the driver's state.
- We reduced our large dataset to be appropriate for our computational resources and used online training.
- We performed well on the deployment of our models on different platforms, like the Jetson Nano and Android.
- We are working on a research paper that we will publish soon.
- Used Python, Pandas, TensorFlow, Matplotlib, MediaPipe, Dlib, CV2 and TF Quantization.

- **Web-Based System for Precision Agriculture Applications In 5G-Based Internet of Things – (Excellent – 100%) - [To Project](#)** **July. 2023**

Developed a system that suggests the best crop to grow according to the sensor values with ML and looks at the crops while growing using fixed cameras to detect the diseases and take action to treat them. Also, the system connects the farmers with the lands 24 hours a day, giving them full control over open water, launching pesticides and other options. We used DL, Arduino, web-based, and Android in our project.

## Projects

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### **Smart Parking System – [To Project](#)** **Feb. 2023**

- The Smart Parking System was a project in our Interface college course.
- We used a Raspberry Pi with Pic and Arduino to detect cars existence on the gate and control entry and exit of the garage depending on sending signals between the components.
- The cars were assigned to the empty spots in the park automatically by using the ESP WiFi module.

### **Data Structure Visualizer – [To Project](#)** **Mar.2022**

- Visualization of Data Structure and Algorithms performance using Java.
- We visualized different Data Structure and Algorithms for educational purposes.
- We showed the difference in performance between the Data Structure and Algorithms.
- We used JavaFX for GUI.

## Skills

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### **Key Technical Skills**

Linux – Computer Vision – Data Visualization – Databases – Linux

### **Programming/Scripting Languages**

C++ – Python – Bash – SQL – Java

### **Technologies**

TensorFlow – NumPy – Pandas – Matplotlib – Seaborn – Sklearn — PostgreSQL — Git/GitHub — GCP

## Activities

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- **ML Instructor**
- Google Developer Groups – Aswan - 2023
- GDSC – Tripoli - 2023
- Egyptian Engineers Syndicate - 2024
- **Google Developer Students Club at Aswan University (GDSC)**
  - Team Leader July. 2021 – July. 2022
  - ML Instructor July. 2020 – June. 2022

## Certification

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- **HCIA-AI (2020 - 2023) | [Certificate](#)**
- **TensorFlow Developer Certificate (02/2022 - Now) | [Certificate](#)**