AHMED HUSSEIN

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Computer Vision Engineer

EDUCATION

University of Politecnico di Milano   **Graduation Date: July 2026**

Master's degree in Computer Science Engineering

University of Science and Technology (UST), Zewail City
Bachelor's degree in Communications and Information Engineering   **Graduation Date: July 2024**

GPA 3.75

Awards: Magna Cum Laude

GRADUATION PROJECT

Precision Agriculture using deep learning, and computer vision

TensorFlow, MongoDB, FastAPI, Vue.js, CI/CI, Azure

- Trained a deep learning model and attained **99.5%** accuracy in disease classification
- Enhanced the model to handle complex images using segmentation and secured over **95%** accuracy
- Developed an end-to-end solution by creating a comprehensive website for experts, farm owners, and farmer
- Integrated a moving vehicle hardware system with **Raspberry Pi** for real-time data collection
- Streamlined project efficiency by implementing **CI/CD** pipelines and deployed on **Azure Container**

INTERNSHIPS

Vodanation Summer Internship, Vodafone   **July 2023 – August 2023**
Extraction of information from national IDs using Deep learning and computer vision
- Boosted OCR capabilities for Arabic text using **YOLO**, boosting recognition rates by 20%
- Devised a **self-training** paradigm, reducing the need for manual annotation by 60%

Deep learning internship   **August 2021 – September 2021**
Neuromatch Academy

- Conducted in-depth analysis of **inhibitory neuron responses** to stimuli using data from 81 mice
- Identified that latency decreased by **20%** when comparing responses to familiar versus novel stimuli

EXPERIENCE

Freelance Computer Vision Engineer, Khamsat   **Jan 2022 - Present**
- Managed 15 large-scale AI projects, overseeing all stages from planning to delivery
- Developed a voice authentication system using wave2vec and HTS with a 4% Equal Error Rate

PROJECTS

Segmentation with Real-Time Inference and Visualization   **June 2023 - July 2023**
PyTorch, Albumentations, Streamlit

- Constructed a DeepLabV3Plus model with PyTorch, achieving an **86% F-beta score**
- Enhanced accuracy by **20%** using data augmentation in Albumentations
- Created a real-time inference app with Streamlit, boosting user interaction efficiency by **50%**

Facial landmarks detection using Free dataset
Deep learning, PyTorch   **May 2023 - June 2023**

- Applied transfer learning and reached a **0.0011** training loss
- Crafted a lightweight model optimized for weaker machines, attaining a training loss of **0.08**

Siamese Network for Face Recognition and Verification   **April 2023 - May 2023**
Deep learning, PyTorch
- Architected a **Siamese** Network face recognition system with **MTCNN** and **FaceNet**, with 5,000+ images
- Utilized **SVM** for classification and recorded **99%** accuracy on testing sets for face similarity

Lawnly (Anime images colorization), deployed as a website on Azure   **October 2022 - February 2023**
PyTorch, Azure
- Designed a convolutional model to **colorize grayscale** anime images using 50,000 training images
- Formulated a **novel loss function**, improving colorization quality by 100%

PUBLICATIONS

Automation of Sagner analysis process (In progress)

Rana Abdelfattah, Ahmed Adel, Eman Mostafa

- Implemented multithreading and an intuitive GUI, reducing program runtime by 66%
- Ensured cross-platform compatibility and produced executable files for easy installation

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TEACHING EXPERIENCE

Junior teaching assistant in deep learning course, Zewail City, for 30 students

March 2023 – July 2023

Managed Jupyter notebooks for over 30 students and produced weekly video tutorials

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EXTRACURRICULAR ACTIVITY

Co-lead in Google developer student club (GDSC) Zewail city   **September 2021 - August 2023**
- Coordinated with the club head to organize 1 major event and 6 activities
- Led deep learning sessions for 10+ students, achieving highest instructor rating

Content creator for Women In Engineering (WIE)   **June 2021 - November 2021**
- Created 2 posts per week on Facebook, empowering women in engineering

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SELF STUDY

Machine Learning (Coursera)

Data analysis in Udacity (EGFWD)

Designing RESTful web APIs (Pluralsight)

SKILLS

Artificial Intelligence, Machine Learning, Deep Learning, Data Science: PyTorch, TensorFlow, Keras, NumPy, SciPy, pandas, OpenCV, Scikit-learn, PySpark

Full Stack Development: HTML & CSS, Vue.js, Angular, FastAPI, Django, MySQL, MongoDB, PostgreSQL

Programming Languages: C/C++, Java, Go, MATLAB

CI/CD Tools: Azure, Docker

Other Tools: Git/GitHub, Unix/Linux, SQL, Firebase, Web Scraping

IDEs: Jupyter Notebooks, Colab, Visual Studio, PyCharm, Anaconda, Spyder