Yousef (Ibrahim Gomaa Mahmoud) Mabrouk

Machine Learning Engineer, Software Developer

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Summary

A Computer Science and Information Technology (CSIT) student majoring in Artificial Intelligence and Data Science (AID) at Egypt-Japan University of Science and Technology. Interested in ML-based applications, blockchain (web3) technology, and software development.

Education

Sept., 2024 - June, 2026	Triangular Study Abroad Exchange Student, School of Informatics and Data Science at **Hiroshima University** (94.4% ∼ GPA: 3.78/4.0)
2021 - Present	Bachelor's Degree of Artificial Intelligence and Data Science at **Egypt-Japan University of Science and Technology** (CGPA: 3.77/4.0)
2019 - 2021	High School Diploma at **Mohamed Korayem Language Schools**

Experience

Machine Learning Engineer Trainee at National Telecommunication Institute. August, 2024

- Covered key areas such as data collection, feature engineering, and exploratory data analysis (EDA).
- Delivered a capstone project that includes the utilization of physiological signals, such as Electroencephalogram (EEG) and Electrocardiogram (ECG), for emotional analysis with high accuracy.
- Fine-tuned deep neural networks such as Convolutional Neural Networks (CNNs), Recurrent Neural Networks (RNNs) and pre-trained models, such as TSCEPTION.

Machine Learning Trainee at Information Technology Institute, Summer Camp. August, 2023

- Participated in machine learning projects focusing on supervised and unsupervised learning models which were designed, and evaluated using Python libraries such as Scikit-learn and TensorFlow on real world problems.
- Collaborated within a group in data preprocessing and feature engineering, ensuring smooth integration and optimization of machine learning workflows as well as a final project summarizing all of our work.

Software Development Intern at iAppsBeats, Indie Game Company. July, 2020 - December, 2021

- Contributed to scripting, graphics design, testing, deployment, and analysis.
- Wrote, debugged, tested scripts using JavaScript to implement game mechanics and character behaviors, and assisted the design team to integrate visual assets with pre-existing features, ensuring seamless implementation and optimization.
- Worked remotely on several game projects such as Ethereum, Corleone and Avalonia.

Last updated: May 23, 2025

Projects & Awards

Welding 101 (2025) Link to Project

- A XR-based (Mixed/Virtual Reality) welding training simulation that provides a safe, cost-effective environment for learning welding techniques. The system integrates real-time AI feedback, metallurgy education, and all major welding methods to enhance hands-on learning. Future implementations include teleoperation, enabling remote welding control via virtual reality.
- Tools used: Unity, C#, Python, Blender, Stable Diffusion, Tensorflow, and Meta Quest SDK.

Attention (2024 National Hackathon - 3rd Place Winner) Hackathon, Link to Project

- A desktop application designed to assist individuals with cognitive disabilities in their pursuit of education. Designed for ADHD users, it features clear task hierarchies, minimized distractions, and time visualization along with a secure system that rewards users with cryptocurrency, supporting both desktop and mobile for accessibility and data privacy.
- Implemented an eye-tracking system with a pre-trained CNN to monitor and enhance focus during study sessions. This system dynamically assesses visual attention and provides real-time notifications to maintain concentration.
- Tools used include Kivy, Ganache, Brownie, Solidity, Python, OpenCV, and PDFMiner.

SIGN CHAT (2020 TAQADDAM Regional - 3rd Place Winner) Taqaddam, Link to Project

- A phone application project aimed to assist individuals who are deaf or hard of hearing that transforms written natural languages (e.g., English) into a series of ASL gestures displayed on a grid and vice versa. Additionally, the application featured mini-games designed to help users learn ASL gestures, making the process interactive and engaging.
- Utilized computer vision modules for real-time detection of hand and facial gestures through any connected cameras.

Extracurricular Activities

IEEE Head of Artificial Intelligence & Machine Learning Committee Fall, 2023 - 2024
at Egypt-Japan University of Science and Technology, IEEE Student Branch

Instructor of "Fundamentals of Artificial Intelligence, Machine Learning, and Neural Networks" technical course at Egypt-Japan University of Science and Technology (E-JUST), IEEE E-JUST Student Branch.

Skills

Programming & Scripting Skills	C++, C#, C, R, Python, JavaScript, GDScript, Apache Spark, AVR Assembly, Arduino C, Solidity, MATLAB, and Bash.
Database Management	MySQL, MariaDB, SQLite, Oracle SQL, and Decentralized Blockchain Architectures.
Machine Learning Tools	Tensorflow, Keras, Pytorch, Scikit-learn, and MLFlow.
Containers & Cloud Platforms	Docker, Node.js, RESTful API (Flask), FastAPI, Microsoft Azure, Microsoft Synapse Analytics, Microsoft Fabric, Azure Data Factory, Azure Cosmos DB, and Databricks.
Soft Skills	Problem-solving, Adaptability, and Attention to Detail.
Natural Language Proficiency	Arabic (Native), English (C1), and Japanese (N4).