Mariam Maysara

AI Engineer

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https://github.com/mariiammaysara kaggle https://www.kaggle.com/mariemmaysara

PROFILE

AI Engineer specializing in machine learning, deep learning, and production AI systems. Expert in Python, FastAPI, LLMs, computer vision, and NLP. Proven track record in building scalable applications with Docker, RESTful APIs, and cloud deployment.

EDUCATION

Bachelor of Computer Science (Artificial Intelligence) 09/2021 – 07/2025
King Salman International University South Sinai, Egypt

- Completed core coursework in mathematics for AI including linear algebra, probability, and statistics
- Studied essential computer science subjects: algorithms, data structures, databases, software engineering
- **Relevant Coursework**: Machine Learning, Deep Learning, Computer Vision, NLP, Data Structures, Algorithms

PROJECTS

Maimo — AI-Powered Study & Productivity Platform 12/2025 – Present

- Architected AI study platform using Next.js 16 and FastAPI with hybrid inference routing between Groq (LLaMA 3) and Gemini 1.5 Pro for academic problem-solving
- Built semantic note-taking with custom LaTeX rendering, AI auto-summarization, and vector-based RAG using Supabase pgvector for intelligent search
- Implemented JWT authentication with NextAuth.js and developed analytics dashboard with learning heatmap and gamified XP system
- Containerized application using Docker Compose for efficient deployment

Veonix — AI-Powered Calorie & Nutrition Analyzer 11/2025 – 12/2025
Source Code: github.com/mariiammaysara/Veonix

- Built full-stack nutrition tracking app using Next.js 15 and FastAPI with Google Gemini 2.0 Flash Vision for instant food recognition and macro calculation
- Developed RESTful API with Pydantic validation, custom middleware for request logging and timing, and SQLite database for meal history management
- Created responsive dashboard with Recharts and Radix UI displaying real-time nutritional trends, health scoring, and interactive macro breakdowns
- Containerized with Docker Compose and deployed production environment on Render

Machine Learning Algorithms from Scratch 08/2025 – 10/2025

- Implemented 8+ machine learning algorithms from scratch using NumPy (Regression, Classification, Clustering) with full mathematical derivations of loss functions, gradients, and optimization methods
- Created interactive Jupyter notebooks with visualizations illustrating training dynamics and convergence, strengthening expertise in core ML optimization and linear algebra

Graduation Project — Farmer Eye (Smart Agricultural Robot Car) 10/2024 – 06/2025

- Developed a smart agricultural robot using Arduino, Raspberry Pi, and temperature sensors for real-time data collection.
- Built a Flutter application to aggregate and visualize sensor data.
- Implemented a CNN-based image analysis model, achieving ~94% accuracy.
- Integrated hardware, AI, and software components into an end-to-end intelligent system.

PROFESSIONAL EXPERIENCE

AI Engineer Intern — Beetleware 08/2025 – 11/2025
Fully remote

- Selected as 1 of 10 participants from 600+ applicants for intensive AI and Software Engineering program
- Engineered distributed AI models using Ray framework with Ray Train and Ray Tune for scalable training and hyperparameter optimization across 50+ experiments
- Developed production-ready SaaS features including RESTful API design, microservices architecture, and secure authentication systems
- Collaborated in Agile teams applying CI/CD pipelines, Git workflows, and code reviews reducing deployment

AI Intern — AOI Training Academy 08/2024 – 08/2024
On-site — Cairo, Egypt

- Completed hands-on training in AI fundamentals using Python including supervised learning, model evaluation, and optimization techniques
- Developed classification and regression models on real-world datasets achieving 85%+ accuracy through guided exercises and mini projects

AI & Machine Learning Intern — Zewail City of Science and Technology 08/2023 – 10/2023
Hybrid — Giza, Egypt

- Applied supervised learning concepts (classification, regression) and neural networks through practical exercises using Python and Scikit-learn
- Implemented ML models with introduction to reinforcement learning, strengthening analytical and problem-solving skills through hands-on projects

SKILLS

Programming Languages
Python, SQL, JavaScript, TypeScript, C++

Machine Learning
- Supervised Learning, Deep Learning, Neural Networks, Computer Vision, NLP, Model Training, Model Optimization, Hyperparameter Tuning, Feature Engineering, Model Evaluation, Distributed Training, Ray Framework

Large Language Models (LLMs)
- OpenAI API, Google Gemini API, Gemini Vision, Groq API, Hugging Face, LangChain, LangGraph, AutoGen, RAG (Retrieval-Augmented Generation), Prompt Engineering, Fine-tuning (LoRA, PEFT), LLaMA

Backend Development
- FastAPI, Flask, REST API, RESTful API Design, Microservices Architecture, API Integration, SQLAlchemy, Pydantic, JWT Authentication, NextAuth.js, Middleware, Request Validation

Databases
PostgreSQL, SQLite, Supabase, pgvector, Vector Databases, SQL, ORM

AI/ML Frameworks & Libraries
- TensorFlow, PyTorch, Scikit-learn, NumPy, Pandas, Keras, OpenCV

Data Visualization
Recharts, Matplotlib, Interactive Charts, Dashboards

NLP & Computer Vision
- Text Preprocessing, TF-IDF, Sentiment Analysis, Text Classification, Transformers, Image Classification, Object Detection, CNN, Food Recognition

Frontend Development
Next.js, React, Tailwind CSS, Framer Motion, Server Actions, Tiptap, Radix UI, Recharts, shadcn/ui

DevOps & Deployment
Docker, Docker Compose, CI/CD Pipelines, GitHub Actions, Git, Version Control, Cloud Deployment, Containerization, Render, Vercel, Oracle Cloud, Supabase, Cloud Computing

LANGUAGES

Arabic ● ● ● ● ●
English ● ● ● ○ ○