

MENNAH MOHAMMED ABDEL-FATAH ABDEL-MOHSEN

01023656863 | mennaabdelmohsen3684@gmail.com | [LinkedIn](#)

PROFESSIONAL SUMMARY

AI, Machine Learning and Computer Engineering professional, currently pursuing an M.Sc. in Artificial Intelligence at Al-Azhar University, with a research focus on detecting agricultural land encroachment using satellite imagery. Teaching Assistant in the Computers Department, Faculty of Engineering, Egyptian Russian University. Skilled in deep learning, machine learning, image processing, pattern recognition, Python, SQL/database systems, web development, and AI-powered Earth observation solutions. Experienced in building practical AI projects, laboratory management systems, Arabic NLP applications, computer vision systems, and satellite mission-control related applications.

CORE COMPETENCIES

- Artificial Intelligence & Machine Learning
- Image Processing & Pattern Recognition
- Full-Stack / Web Development
- Embedded / Satellite Mission-Control Applications
- Deep Learning & Computer Vision
- Arabic Natural Language Processing
- Academic Teaching & Online Training
- Satellite Image Analysis & Earth Observation
- Python Development & SQL Databases
- Research Writing & Scientific Projects

PROFESSIONAL & ACADEMIC EXPERIENCE

Teaching Assistant - Computers Department | Faculty of Engineering, Egyptian Russian University

Cairo, Egypt | Current

- Teach and support computer engineering students through academic guidance, technical sessions and practical coursework assistance.
- Deliver online courses and technical training for students from different universities in programming, AI-related topics and applied computing.
- Support students in understanding core computing concepts through practical examples, projects and problem-solving sessions.

AI, Machine Learning & Web Developer | Freelance / Academic Projects

Current

- Develop AI and deep learning projects in computer vision, satellite imagery, Arabic NLP and laboratory management automation.
- Build websites and database-driven applications using Python, SQL and web technologies.
- Translate academic AI concepts into usable systems, dashboards and project-based applications.

Software Engineer - Satellite Telemetry and System Integration | Egyptian Space Agency

Cairo, Egypt | Dec 2024 - Feb 2025

- Designed and optimized Oracle database schemas and telemetry-related algorithms for satellite system workflows.
- Integrated LabVIEW interfaces with real-time backend systems and supported system-level testing.
- Collaborated with hardware and software teams to ensure reliable cross-subsystem functionality.

Network Designer & Simulator | Freelance / Academic Projects

Mar 2024 - Jul 2024

- Designed enterprise network simulations using Cisco Packet Tracer.
- Configured VLANs, routing protocols, ACLs, DHCP and NAT with CCNA-level troubleshooting.

EDUCATION

M.Sc. in Artificial Intelligence - In Progress | Al-Azhar University

Cairo, Egypt | Current

- Research focus: Detection of agricultural land encroachment using satellite imagery.
- Current scientific research work in AI-based land monitoring and remote sensing applications.
- Relevant postgraduate coursework: Artificial Intelligence, Image Processing, Pattern Recognition.

B.Sc. in Systems and Computer Engineering | Faculty of Engineering, Al-Azhar University

Cairo, Egypt | 2020 - 2025

- Grade: Excellent with Honors.
- Graduation Project: Manual and Automatic Design and Implementation of Satellite Mission Control System with Web Remote Access.
- Project Grade: A+; completed in collaboration with the Egyptian Space Agency.
- Key contributions: structural subsystem design, embedded system integration, PCB design, AI-based satellite applications and web-based mission-control interface.

SELECTED PROJECTS

Agricultural Land Encroachment Detection Using Satellite Imagery

- Research-oriented AI project focused on detecting violations on agricultural land using satellite images and remote-sensing data.
- Applies image processing, machine learning/deep learning and object detection techniques for land-use monitoring.

Laboratory Management System

- Built a lab management system using Python and SQL to manage patient records, tests, samples, reports and database workflows.
- Designed practical features such as structured test data, reporting workflows, sample status tracking and role-based system logic.

Arabic Text Understanding / NLP Project

- Implemented an Arabic text understanding project applying AI concepts to process, analyze and interpret Arabic text.

Face Detection Project

- Developed a computer vision project for face detection using image processing concepts and AI-based detection workflows.

Mission Control & AI-Based Satellite System

- Implemented STM32-based embedded control with sensors including MPU6050, BMP and DHT22.
- Built real-time telemetry workflows using LabVIEW and Python, with database and web access for mission control.
- Applied AI models for land-use violation and wildfire detection using YOLO-based object detection and satellite datasets.

Oracle Database Design & Optimization

- Designed normalized schemas and automated business logic using Oracle Database and PL/SQL.

TECHNICAL SKILLS

Programming: Python, C, C++, Java OOP, Embedded C, x86 Assembly

AI/ML: Deep Learning, Machine Learning, Classification, Regression, Object Detection, YOLOv5/YOLOv8, AI Search Algorithms

Computer Vision: Image Processing, Pattern Recognition, Face Detection, Satellite Image Analysis

Databases: SQL, Oracle Database, PL/SQL, PostgreSQL

Web/UI: HTML, CSS, Figma, React basics, Tkinter, PyQt, Java Swing

Embedded & Tools: STM32, ARM, ESP32-CAM, RTOS basics, Verilog, VHDL, LabVIEW, MATLAB, Simulink

Networking: Cisco Packet Tracer, VLANs, Routing, NAT, ACLs, DHCP

Operating Systems: Windows, Linux basics

COURSES & TRAINING

- Artificial Intelligence - postgraduate coursework / full course completed
- Image Processing - M.Sc. coursework
- Pattern Recognition - M.Sc. coursework
- Java & OOP - SkillsBus
- Oracle Database & PL/SQL - SkillsBus
- Data Structures using C++ - SkillsBus
- Front-End Development & UI/UX - Route Academy
- Embedded Systems - Zagloul Academy, In Progress
- LabVIEW - Egyptian Space Agency
- Basic Cybersecurity Concepts - Self-learning

ACTIVITIES

- PR Member - Enactus Al-Azhar, 2022
- Network Member - Azens Track, 2022
- ICPC Participant - Al-Azhar University Team, 2021
- Embedded Systems Trainee - Zagloul Academy, Apr 2025 - Present
- Front-End Trainee - Route Academy, Feb 2023 - May 2023

SOFT SKILLS

- Problem-solving and analytical thinking
- Academic communication and student mentoring
- Responsible, adaptable and self-motivated
- Team-oriented with leadership potential
- Fast learner with excellent time management