Mostafa Abdelmeguid Ramadan

Computer Science Student • AI Developer • Python Developer
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PROFESSIONAL SUMMARY

CS student (Cybersecurity track, Pharos University — 2027) who builds independently and ships. Projects span YOLOv8 object detection pipelines, multithreaded Python automation tools, FastAPI backends, and ESP32-CAM edge prototypes — all built outside of coursework. Currently focused on AI agent architectures and Model Context Protocol (MCP) tooling, with a practical interest in how AI systems integrate into real developer workflows.

CORE COMPETENCIES

Computer Vision & Object Detection • AI Agent Development & MCP • Python Automation & Scripting • Machine Learning Pipeline Design • Backend API Development • Multithreaded Systems • Embedded AI & Edge Computing • Prompt Engineering • REST API Design & Integration

TECHNICAL SKILLS

Programming: Python • C++ • JavaScript • SQL • HTML/CSS
AI & ML: YOLOv8 • OpenCV • Computer Vision • Machine Learning • AI Agents • Prompt Engineering • MCP
Backend: FastAPI • REST APIs • SQLAlchemy • JWT Authentication
Automation: Selenium • Web Scraping • Multithreading • Tkinter • Data Processing
Embedded: ESP32-CAM • Arduino • Embedded Networking
Tools: Git • GitHub • Docker • Linux / WSL • VS Code • Figma

PROJECTS

AI Automation Tools

- Architected a Python automation suite covering web scraping, multi-source data processing, and desktop GUIs — structured with separated scraping, pipeline, and UI layers for independent maintainability.
- Built concurrent processing workflows using Python threading to run extraction and export tasks in parallel, avoiding UI thread blocking.
- Developed Tkinter-based desktop applications giving non-technical users a clean, responsive interface over complex automation logic.

Computer Vision Projects

- Built end-to-end object detection systems with YOLOv8 and OpenCV — from dataset preparation and annotation to model training, validation, and integration into downstream automation pipelines.
- Evaluated model configurations against accuracy and inference-speed trade-offs, selecting deployable setups matched to specific automation targets.

Embedded AI Projects

- Designed an ESP32-CAM prototype for live video streaming and user authentication, integrating networking and AI-adjacent functionality within embedded hardware constraints.
- Navigated microcontroller limitations — memory, compute, and connectivity — to make AI-adjacent features viable on resource-constrained devices.

AI Agent & Developer Tooling Research

- Studied Model Context Protocol (MCP) architecture, focusing on how agents reliably access external tools and APIs in structured, composable workflows.
- Investigated multi-agent coordination patterns and their practical trade-offs for AI-assisted developer tooling and code generation pipelines.

EDUCATION

Pharos University in Alexandria — Expected Graduation: 2027

Bachelor of Computer Science (Undergraduate) — Specialisation: Cybersecurity
Relevant Coursework: Artificial Intelligence • Machine Learning • Pattern Recognition • Digital Forensics • Advanced Computer Networks • Web Security

TRAINING & CERTIFICATIONS

UI/UX Design Training (100 Hours)

Arabian Academy in Alexandria • 2025

- Designed wireframes and interactive prototypes in Figma, applying user-centred design methodology to validate concepts before implementation.
- Developed and documented a design system covering component libraries, spacing, typography scales, and interaction states.
- Applied usability evaluation techniques to iterate on interface designs and translate UX research findings into actionable decisions.

LANGUAGES

Arabic — Native • English — Upper-Intermediate (B2)