Omar Nasser El Din Ahmed

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Objective

Driven Mechatronics Engineering student with hands-on experience in industrial automation, PLC programming, and data analytics. Passionate about contributing to Industry 4.0 and digital transformation initiatives by integrating smart technologies, data-driven decision-making, and cybersecurity practices. Eager to apply technical skills and continuously learn in a dynamic environment focused on innovation and industrial efficiency.

Education

Helwan University 2026
Bachelor of Engineering in Mechatronics Giza, Egypt

Relevant skills

- **Industrial Automation:** Proficient in PLC programming, classic control, and motor drive systems. Completed projects and practical tasks related to power and control circuits.
- **Software & Tools:** Experienced in SolidWorks and AutoCAD for designing
- **Programming Languages:** Basic knowledge of C programming; experienced with Python (related to data analysis and machine learning fundamentals).
- Cybersecurity in Industrial Control Systems
- Data Analysis & Visualization (Excel, Pandas, NumPy, Cognos Analytics)
- AI & Machine Learning

Certificates

Basic Automation Diploma - HA Consulting Group Courses
included Classic Control, PLC Programming, and Electric Motors & Drive Programming.

Industrial Control Systems Cybersecurity Training - 300 - Cybersecurity & Infrastructure Security Agency (CISA)

Introduction to Data Analysis - IBM (Coursera)

Data Visualization and Dashboards with Excel and Cognos - IBM (Coursera)

Python for AI and Data Science (IBM)

Artificial Intelligence Course (Huawei Academy, 80 Hours)

Languages

English ●●●●○ Arabic ●●●●●

Projects

Industrial Gen AI Knowledge System 2025

- Built a generative AI system for querying industrial documents using knowledge graphs and semantic search.
- Optimized PostgreSQL (Supabase) and Neo4j databases for efficient storage and retrieval of chat analytics and knowledge graph data.
- Integrated Voyage AI embeddings for hybrid search, improving response relevance by 30% for industrial applications.
- Developed a Streamlit interface for real-time chat, document processing, and analytics, enhancing industrial knowledge management.

Vision-sense: AI-Powered Emotion & Behavior Analyzer

- Developed an AI-based system to analyze human emotions and behaviors using computer vision and deep learning algorithms.
- Implemented machine learning models for facial expression recognition and behavioral pattern analysis.
- Integrated AI-powered decision-making for real-time applications

Industrial Automation Projects

Completed multiple projects in PLC programming, sensor integration, motor control,
and troubleshooting real power and control circuits.

Professional Experience

AutomatiX 06/2025 – 08/2025

Automation Engineering Intern Cairo, Egypt

- Developed a full-stack Advanced GraphRAG Chat System to enhance technical document analysis for automation solutions, integrating SCADA and DCS data for clients in oil & gas and pharmaceutical sectors.
- Designed and implemented backend using Python, Streamlit, PostgreSQL (Supabase), Neo4j, and Voyage AI for knowledge graph creation, entity extraction, and semantic search, improving data retrieval efficiency.
- Built a responsive frontend with Streamlit, featuring chat, context, and analytics views, enabling real-time interaction with technical data and knowledge graph visualizations.
- Utilized Siemens technologies and collaborated with engineering teams to ensure system compatibility, enhancing client support for automation projects across the Middle East.
- Gained expertise in PLC programming, HMI design, and graph-based AI systems, contributing to AutomatiX's mission of delivering innovative, client-focused solutions.