

# Omar Essam El-Din Mohamed

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## PROFESSIONAL SUMMARY

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A highly skilled Data Engineering And Machine Learning Lead with extensive experience in construction, civil engineering, data engineering, and machine learning. Currently specializing in AI development, web AI applications, and full-stack websites, with a proven track record of delivering innovative solutions like chatbots with local LLMs and running background commands with AI Agents to support company operations. Adept at leveraging advanced technologies, including GPU-accelerated development, to optimize workflows and enhance business insights under tight deadlines.

## EDUCATION

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**Cairo University**, Bachelor of Science in Civil Engineering, May 2013

*Overall Grade:* Good (C)

*Project Grade:* Excellent (A) Graduation Project: Steel Bridges Design

**Orouba Language School**, Graduation Score: 98.9% (405.5/410)

## PROFESSIONAL EXPERIENCE

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### Programming and Data Engineering Experience (6 years of experience)

- **Data Engineering And Machine Learning Lead** | Rowad Modern Engineering (Jan 2025 – Present)
  - Developed a Retrieval-Augmented Generation (RAG) chatbot using embeddings to enable efficient document-based question answering, improving internal knowledge access.
  - Built a full-stack website integrating Oracle ERP and on-premises data warehouse, allowing users to extract data, query insights, and visualize results for enhanced decision-making.
  - Leveraged NVIDIA 4090 GPUs to develop AI agents for automating coding, debugging, and workflow optimization, significantly improving team productivity.
- **Data Engineering Lead** | Rowad Modern Engineering (Jul 2023 – Dec 2024)
  - Established a data warehouse team, integrated data sources for improved reporting and visualization.
- **Data Scientist** | Rowad Modern Engineering (Jul 2021 – Dec 2022)
  - Developed machine learning models for cash flow predictions.
- **Senior Data Engineer** | Rowad Modern Engineering (Nov 2020 – Jun 2021)
  - Automated repetitive tasks using Python, saving significant resource hours.
- **IT Networking / Data Engineer** | Rowad Modern Engineering (Jan 2020 – Oct 2020)
  - Maintained MySQL databases on Linux Servers, ensuring seamless data access and storage.
- **Co-Owner** | Cyber Cafe (2009 – 2011)
  - Managed hardware and networking for all systems.

## Construction and Civil Engineering Experience (7 years of experience)

- **Project Control Section Head** | Rowad Modern Engineering, Bridges Sector (Sep 2019 – Dec 2020)
  - Managed the project control team for bridge projects. Streamlined cost and schedule reporting processes. Enhanced coordination between construction and planning teams.
- **Senior Project Control Engineer** | Rowad Modern Engineering, Head Office (Jan 2017 – Aug 2019)
  - Oversaw multiple project schedules and cost control measures. Delivered periodic project performance reports to stakeholders.
- **Project Control Engineer** | Rowad Modern Engineering (Apr 2016 – Dec 2016)
  - Worked on major infrastructure projects including Nefisha Bridge and El Sokhna Tunnel.
- **Tendering Engineer** | Rowad Modern Engineering, Tender Department (Jan 2016 – Mar 2016)
  - Evaluated project tenders for technical and financial feasibility.
- **Planning/Cost Control Engineer** | Concrete Plus (May 2011 – Aug 2013)
  - Coordinated cost control for multiple projects from the head office.
- **Site Engineer** | Concrete Plus, Porto October Project (Aug 2010 – Aug 2011)
  - Supervised on-site construction activities, ensuring compliance with design specifications.

## KEY SKILLS

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- **Data Engineering:**  
ETL pipelines, Airflow, Spark, ERP systems, Docker
- **Machine Learning and AI:**  
RAG, embeddings, GPU-accelerated development (NVIDIA 4090), AI agent development
- **Data Visualization and BI Tools:**  
Power BI, Looker, Tableau, visualization libraries within Python
- **Engineering Tools:**  
Primavera P6, MS Project, Synchro, Revit, Navisworks, AutoCAD
- **Programming:**  
Python, SQL, Java, R, C++, C# (familiar)
- **Software:**  
Microsoft Office, Adobe Photoshop, Illustrator, After Effects
- **Construction Expertise:**  
Cost Control, Tender Evaluation, Risk Management
- **Languages:**  
Arabic (Native), English (Fluent)

## CERTIFICATIONS

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- Certified Data Scientist Professional (Epsilon AI)
- Primavera P6
- Python Programming
- PMP Certification
- CCNA and CCNP Networking
- Steel Bridges Design
- Develop Generative AI Applications: Get Started (IBM, Coursera, Jul 2025)
- Build RAG Applications: Get Started (IBM, Coursera, Jul 2025)
- Vector Databases for RAG: An Introduction (IBM, Coursera, Jul 2025)

## PERSONAL PROJECTS

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- Guitarist in an Iron Maiden cover band.
- Created a music YouTube channel with over 100,000 subscribers.
- Co-created the social media group ESS.
- Co-hosted a political podcast.
- Wrote two sci-fi novels.
- Worked in the rescue of street cats and dogs in Maadi.