

Ismaiel Hossam Eldien ElShafey

AI Engineer | LLM Agents & RAG | Computer Vision | NLP

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SUMMARY

Results driven AI Engineer and Egypt Japan University graduate specializing in AI and Data Science. Proven ability to architect and implement complex agentic AI workflows and Retrieval-Augmented Generation (RAG) systems. Engineered full-stack AI solutions, including a multi-agent HR platform and an intelligent waste-sorting system (Binny AI), which was awarded an A+ for the graduation project. Actively research cutting-edge AI and implement advanced tools to solve complex technical challenges.

SKILLS

AGENTIC AI & LLMS: Agentic AI | Retrieval-Augmented Generation (RAG) | LangChain | LangGraph | Google Gemini API | Prompt Engineering | Tool Calling | Evaluation & Evals | AI Workflow | Chatbots | Automation

ML/DL & COMPUTER VISION: Machine Learning | Deep Learning | Natural Language Processing (NLP) | Computer Vision | Neural Networks | TensorFlow | PyTorch | Scikit-learn | OpenCV

PROGRAMMING & INFRASTRUCTURE: Python | C++ | OOP | REST API Integration | Unit Testing | Git | Docker | MLOps | Cuda | Parallel Computing

DATA ENGINEERING & DATABASES: SQL | Vector Databases | FAISS | Pandas | NumPy | Data Wrangling | Data Modeling | Cloud Platforms (AWS/GCP)

SOFT SKILLS & COLLABORATION: Problem Solving | Critical Thinking | Communication | Cross-Functional Collaboration | Adaptability | Presentation | Arabic (Native) | English (Fluent)

EXPERIENCE

NTI (Agentic AI Trainee), NTI | 01/2026 – 04/2026

- Architected and implemented agentic AI techniques and RAG systems for three industrial applications, resulting in a 25% reduction in manual processing time.
- Developed the TaskTune AI multi-agent HR management platform as a key output of the training.
- Mastered advanced frameworks including LangChain and LangGraph to build scalable AI agents.

NTI (Data Analysis & BI Intern), NTI | 07/2024 – 11/2024

- Spearheaded data analysis initiatives using Excel, Power BI, SQL, and Python to generate actionable business insights.
- Utilized statistical analysis and data manipulation to optimize internal business processes and decision-making.
- Designed comprehensive data visualizations and reports to communicate complex findings to stakeholders.
- Optimized relational database management and SQL query performance for multi-gigabyte datasets, improving load times by 18% for core business intelligence reports.

WE (AI & Big Data Intern), WE | 05/2024 - 07/2024

- Completed intensive AI training focused on machine learning algorithms and data science methodologies.
- Performed data preprocessing and manipulation using Python and Pandas on diverse real-world datasets.
- Executed artificial intelligence algorithms to resolve complex analytical classification tasks.
- Developed predictive models and conducted rigorous evaluations using Scikit-learn and TensorFlow.

PROJECTS

- **TaskTune AI:** Architected a multi-agent HR ecosystem utilizing LangGraph to coordinate 5 specialized AI agents, automating performance reporting and feedback loops. Implemented a full-stack solution (React/ASP.NET Core) that streamlined task tracking and reduced manual HR reporting overhead through intelligent LLM-driven reporting.

- **Breedify:** Engineered a high-performance mobile Computer Vision application leveraging Gemini-2.5-Flash for real-time animal breed classification. Optimized prompt engineering and visual input processing to achieve rapid, accurate identification within a React Native environment.

<https://github.com/ismaielElshafey/Breedify>

- **Binny AI:** Designed an IoT-integrated Computer Vision system for automated waste sorting, achieving an A+ grade. Integrated ESP32-CAM with Google Gemini API for real-time material classification, significantly improving recyclable separation accuracy compared to traditional sensor-based methods.
<https://github.com/ismaielElshafey/Binny-AI>
- **Masr News AI:** Developed an advanced RAG pipeline for Arabic NLP, utilizing FAISS vector storage to enable semantic search across large news datasets. Optimized retrieval precision for right-to-left languages, allowing for accurate, context-aware Q&A on complex Arabic articles.
<https://github.com/ismaielElshafey/Masr-News-AI>
- **ArabSQL:** Created an NLP-to-SQL pipeline for the Arabic language, fine-tuning Transformer-based models (SQLCoder) to handle complex linguistic nuances. This system facilitates touchless data querying for non-technical users through natural language interfaces.
<https://github.com/ismaielElshafey/ArabSQL>
- **PowerO:** Built a low-latency gesture recognition engine using OpenCV and MediaPipe for hands-free presentation control. Improving accessibility and user engagement through advanced human-computer interaction.
<https://github.com/ismaielElshafey/PowerO>

EDUCATION

Bachelor of Computer Science, Egypt Japan University of Science and Technology | 07/2021 – 06/2025

- Major in AI & Data Science

Military Service: Exempt