

# AHMED ELTAWHEEL

AI Product Solution Architect | GenAI & Agentic AI Ecosystems | Cloud & ML Engineering Egypt |  
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[eltaweelactuary.github.io/ahmed-eltaweel-portfolio](https://github.io/ahmed-eltaweel-portfolio)

## PROFESSIONAL SUMMARY

AI Product Solution Architect and AWS Community Builder (2022–2025) with progressive experience designing and deploying production-grade Agentic AI systems, GenAI ecosystems, and enterprise AI products across Insurance, Financial Services, Accessibility, and Telecom sectors. Currently leading AI product architecture at Konecta Global — delivering the Konecta Sign (Wasel) enterprise sign language translation platform, hybrid Router architectures, On-Premises AI deployments, and rapid PoCs through vibe coding. Deep hands-on expertise in Python, LLM orchestration, Computer Vision, and cloud-native AI (AWS, GCP, Azure). M.Sc. Candidate in Data Science at Cairo University.

## TECHNICAL SKILLS

**Agentic AI & GenAI:** Multi-Agent Orchestration (CrewAI, LangGraph, AutoGen), Large Language Models (Gemini 2.5/3, GPT-4, Claude), RAG Architectures, Prompt Engineering, Agentic Workflows, Tool-Use Agents, MCP (Model Context Protocol). **AI Product Architecture:** Hybrid Router Architectures, Semantic Caching, On-Premises / Air-Gapped AI Deployment, B2B SaaS Engine Design, Multi-Modal AI Pipelines, Real-Time Translation Systems. **Rapid Prototyping & Vibe Coding:** Full-Stack PoC Development, Streamlit, FastAPI, Next.js, Flask, SocketIO, AI-Assisted Development (Antigravity, Cursor, Copilot, Gemini Code Assist). **Computer Vision & ML:** MediaPipe (Hand/Pose Landmarks), YOLOv8, Deep Learning (TensorFlow, PyTorch), Scikit-learn, XGBoost, LightGBM, CatBoost, FAISS / Vector Search. **Cloud Platforms:** AWS (SageMaker, Lambda, Bedrock), Google Cloud (Vertex AI, BigQuery, Cloud Run, Gemini API), Azure (Azure ML, Data Factory). **DevOps & Deployment:** Docker, CI/CD (GitHub Actions), Git, Cloud Run, On-Prem Containerized Deployment, Model Monitoring. **Data & BI:** Python (Pandas, NumPy, Polars), SQL, Power BI (Advanced DAX), R, Google Sheets Automation (Apps Script).

## PROFESSIONAL EXPERIENCE

**Konecta Global** | Egypt/Europe *AI Product Solution Architect (AI Practitioner / Data Scientist)* | Dec 2024 – Present \*  
**Konecta Sign Product (Wasel):** Led the architecture of Konecta Sign — an enterprise-grade real-time sign language translation platform evolving from cloud-first (Gemini API) through hybrid Router architecture to fully On-Premises air-gapped deployment. \* **Hybrid Router Architecture:** Designed a low-latency hybrid translation engine using MediaPipe landmarks, semantic caching (FAISS), and intelligent Gemini fallback — reducing API costs by 70%+. \* **On-Premises AI Architecture:** Engineered a complete On-Prem, air-gapped AI deployment architecture for privacy-sensitive government and enterprise clients. \* **B2B Integration & Presales:** Built Digital Egypt Sign Client — a B2B demo portal showcasing Konecta Sign integration for government partners. \* **Agentic AI Solutions:** Deployed multi-agent orchestration systems using CrewAI and LangGraph for automated document processing and intelligent customer service workflows. \* **GenAI Pipeline Architecture:** Designed end-to-end GenAI pipelines achieving high retrieval accuracy using RAG architectures on Vertex AI and Gemini. \* **ROI Analytics Dashboard:** Implemented Power BI analytics dashboards with Advanced DAX, providing real-time KPI visibility to C-level stakeholders.

**Financial Regulatory Authority (FRA)** | Egypt *Senior Actuarial & Data Analyst (Senior Data Scientist & AI Engineer)* | Jul 2021 – Dec 2024 \* **National Data Platform:** Architected a national-scale BI and data analytics ecosystem for Egypt's Life Insurance and Pension sector. \* **ML-Powered Pricing Engine:** Developed ensemble ML models (XGBoost, LightGBM, CatBoost) for actuarial pricing with Streamlit-based interactive dashboards. \* **Process Automation:** Engineered Python-based automation pipelines that eliminated manual processing bottlenecks across multiple regulated entities.

**Mohandes Insurance** | Egypt *Actuarial / Risk Analyst (Data & Risk Analyst)* | Jul 2019 – Jul 2021 \* **ERM Framework**

**Design:** Designed the company's first Enterprise Risk Management (ERM) data framework aligned with ISO 31000. \* **Data-**

**Driven Optimization:** Leveraged R/Python analytics to optimize loss ratio efficiency for motor and property portfolios.

## FEATURED PROJECTS

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- **Konecta Sign / Wasel v5 Router Engine:** Enterprise sign language translation with hybrid architecture — MediaPipe + semantic cache (FAISS) + Gemini fallback.
- **On-Prem AI Deployment (cv\_gimini):** Air-gapped, privacy-compliant AI architecture for enterprise sign language translation.
- **Digital Egypt Sign Client:** B2B integration demo for government and enterprise partners.
- **Wasel Green Path (Gemini 3 Hackathon):** AI-powered accessibility suite for deaf community — finalist at Google Gemini 3 Hackathon.
- **Actuarial Pricing Orchestrator:** End-to-end ML pricing engine using multi-model ensemble with Streamlit dashboard.
- **Smart DMS RAG:** Enterprise document retrieval using Vertex AI embeddings and vector search.
- **Omnichannel AI Bot:** Multi-channel intelligent assistant (Telegram + Web) with Gemini-powered responses.
- **AI Newsletter Crew:** Multi-agent content generation pipeline using CrewAI.
- **National Tax Compliance Portal:** Automated compliance engine for high-volume daily transactions.

## EDUCATION

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**Master of Science in Data Science (In Progress)** *Cairo University, Faculty of Graduate Studies for Statistical Research (FGSRE)* | Egypt \* **Thesis:** Applying AI Tools to Optimize Actuarial Pricing and Risk Models Using Wearable Device Data.

**Bachelor of Science in Actuarial Science** *Cairo University, Faculty of Commerce – Actuarial Science Department* | Egypt | 2012 – 2016

## KEY CERTIFICATIONS & HONORS

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- **Professional Machine Learning Engineer** | Google Cloud
- **AI/ML Pre-sales Technical Expert** | Google Cloud
- **Google Cloud Data Analytics Professional** | Google Cloud
- **AWS Certified Solutions Architect – Professional** | AWS
- **AWS Certified Machine Learning Engineer – Associate** | AWS
- **AWS Community Builder (AI/ML Track)** | 2022 – 2025
- **Azure Data Engineer (DEPI)** | Microsoft
- **McKinsey Forward Champion** | McKinsey & Company
- **Certified Innovation Leader (CIL)** | ITIDA
- **Power BI Certified Specialist** | Microsoft