

Ramy Gharib

Python Developer | ML Engineer Specialist

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Results-driven ML Engineer and Python Automation Specialist with 8+ years at Amazon, delivering AI-powered solutions that operate at massive scale across MENA marketplaces. Deep expertise across the full ML lifecycle — from problem framing, model training and evaluation, through to production deployment and monitoring. Proven ability to translate complex business challenges into scalable, automated systems that eliminate manual effort, reduce costs, and measurably improve data quality and customer experience.

AREAS OF EXPERTISE

- **Languages:** Python (Expert), SQL (Advanced), TypeScript, Node.js
- **Frameworks/Tools:** Flask, REST APIs, Selenium, Pandas, NumPy, HuggingFace Transformers, DistilBERT, LSTM
- **Specializations:** LLM Prompt Engineering, ML Model Development & Deployment, Workflow & Data Pipeline Automation, Catalogue Quality & Defect Detection, NLP & Text Classification
- **Infrastructure:** AWS, AWS Lambda, EC2, Linux, NoSQL, OOP, Quicksight, Git

KEY ACHIEVEMENTS

- **Scale & Cost Optimization:** Reduced catalogue processing volume from **1,086M to 523M ASINs (50%** reduction) by consolidating 8 redundant workflows into a single unified pipeline, while maintaining **100%** rule accuracy.
- **AI/LLM Innovation:** Led prompt engineering for an LLM-powered bilingual size detection system, increasing detection accuracy from **75% to 90%+**, targeting a reduction of **18,000 customer contacts** annually.
- **Operational Impact:** Delivered a projected **\$9.6M** reduction in return costs and **\$300K** in annual net concession savings by resolving Title-Size inconsistencies across **25%** of affected Shoes & Apparel ASINs in MENA.
- **Process Efficiency:** Improved catalogue remediation actionability rate from **38% to 53%**.
- **Infrastructure Modernization & Cost Optimization:** Modernized MENA catalogue processing infrastructure by migrating from a legacy framework to a scalable platform, consolidating **8 complex** remediation rules into a single Python-based pipeline and improving data actionability by **39%**.

TOP PROJECTS

- **AI-Powered Bilingual Size Detection (2025):** Designed and led prompt engineering for a three-layer LLM-based framework to detect bilingual Title-Size inconsistencies across MENA Softlines (Shoes & Apparel). The system validates English-Arabic consistency, Title-Size attribute alignment, and size system standardization. Enhanced detection accuracy from **75%** to over **90%**, contributing to an estimated **\$9.6 million** reduction in return costs and eliminating approximately **18,000 customer contacts** annually.
- **Catalog Quality Architecture Redesign (2025):** Re-engineered **8 legacy** catalogue remediation rules into a single unified, sequential Python pipeline with conditional execution logic and cross-marketplace attribute backfilling. Eliminated redundant ASIN ingestion across workflows, resulting in a **50%** reduction in annual processing volume (from **1,086 million to 523 million ASINs**), **100%** rule accuracy maintained, and remediation actionability improved by **39%**.

- **Customer Service Workflow Automation & ML Integration:** Implemented machine learning models within customized global frameworks to automate bin checks and vendor response validations according to MENA-specific Standard Operating Procedures (SOPs). These efforts achieved a remediation success rate of **86.9%**, exceeding the organizational target of **85%**.

PROFESSIONAL EXPERIENCE

Amazon

Python Engineer – ML Engineer

Cairo, Egypt

Jun 2023–Present

- Redesigned MENA catalogue quality processing architecture by consolidating **8 independent** remediation workflows into a single unified Python pipeline — cutting processing volume from **1,086M to 523M ASINs (50% reduction)** while maintaining **100%** rule accuracy and reducing infrastructure costs.
- Designed a cross-marketplace data integration solution pulling simultaneously from **7 international catalogue data sources** (AE, EG, SA, US, UK, IN, AU) to automatically backfill missing attributes, descriptions, and product dimensions — improving catalogue actionability from **38% to 53%**, a **39%** gain.
- Led prompt engineering for an LLM-powered bilingual size detection system across MENA Softlines (AE, SA, EG), designing a three-layer detection framework covering English-Arabic consistency, Title-Size attribute matching, and size system standardization — improving detection accuracy from **75% to 90%+**, targeting **\$9.6M** in return cost reduction and **\$300K** in annual net concession savings.
- Integrated ML models into an automated customer service ticket validation workflow, enabling intelligent routing and automated resolution of bin check and vendor response tickets — achieving a remediation rate of **86.9%**, exceeding the **85%** business target.
- Maintained 24/7 production monitoring across all automation pipelines, partnering with QA and DevOps teams to ensure rapid incident response and zero-downtime catalogue data processing across MENA marketplaces (AE, SA, EG).

Amazon

Automation Engineer

Cairo, Egypt

Oct 2019– Jun 2023

- Built and deployed **11 automation tools** across Amazon’s MENA catalogue quality team, covering product type classification, data accuracy validation, image quality detection, content enrichment, variation integrity checks, and catalogue coverage allocation — each replacing a previously manual process.
- Independently researched, trained, and deployed a DistilBERT-based product type classification model fine-tuned on **542 Product Types** MENA product types, achieving a **91% F1 score on test data** and **95% on training data** — fully automating a catalogue audit process that previously required manual review of **~6,000 ASINs**.
- Automated catalogue audit throughput, reducing processing time from **700 ASINs per 8-hour shift to 700 ASINs in 3.37 minutes**, saving an estimated **174 hours per month (~1 FTE)**, and contributing to a total headcount saving of **58 HC** across all automation tools deployed during this role.

- Built a self-service Quicksight dashboard to detect broken product variations at scale, uncovering that **~40% of ~\$60M in high-priority products** had broken variations — identifying and resolving these defects increased individual ASIN sales by up to **35%**.
- Drove product data quality from **17% to 70%** across 300 Product Types — a **270% year-on-year** improvement — by building automated attribute backfill and enrichment workflows that eliminated dependency on manual data entry.
- Developed modular, reusable Python scripts using Selenium and Flask to eliminate repetitive catalogue workflows across multiple teams, reducing average task execution time by over **80%** — from approximately 2 hours to under 10 minutes per task — and ensuring code quality standards that allowed any team member to extend or maintain the solutions independently.

Amazon

Senior Operations Coordinator

Cairo, Egypt

Jan 2017– Oct 2019

- Managed and resolved customer escalations with a **99.8%** within-SLA resolution rate, directly contributing to a **12%** improvement in customer trust scores across MENA operations.
- Increased product conversion rates by **30%** by identifying and fixing catalogue discoverability issues — applying structured content quality improvements and SEO standards at scale across product listings.
- Enforced SEO and content quality standards across product descriptions at scale, ensuring full compliance with Amazon’s website and business publishing requirements across MENA marketplaces.
- Proactively identified, documented, and escalated operational bottlenecks to senior stakeholders, enabling faster resolution and measurable improvements in team throughput within strict SLA timelines.

EDUCATION

Cairo University

Bachelor of Commerce (Accounting)

2013-2017

CERTIFICATES

- Post Graduate Program AI and Machine Learning ([Great Lakes Institute of Management](#))
- Python ([HackerRank](#))
- SQL Advanced ([HackerRank](#))
- Rest API Intermediate([HackerRank](#))