



Muhammad Farouk

Python & Automation Engineer | AI Workflows & Backend Developer

📍 Cairo, Egypt



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SUMMARY

Results-driven Software & Automation Engineer specializing in Python, custom AI agents, ETL pipelines, and scalable web applications. Proven track record in architecting large-scale data transformation systems (processing 800K+ datasets), deploying workflow automation, and engineering full-stack solutions with Flask and PostgreSQL. Adept at cutting operational bottlenecks and optimizing cross-functional technical processes.

PROFESSIONAL EXPERIENCE

Content Engineer

Nagwa, Cairo, Egypt | Aug 2025 - Present

- Drive cross-functional efficiency by designing and deploying custom AI agents and automated scripts, cutting down manual task times across multiple business units.
- Architect and develop internal tools and web applications to streamline workflows for Production, HR, and Finance divisions, significantly reducing operational bottlenecks.
- Lead end-to-end data processing and advanced data analysis, transforming raw datasets into actionable insights to improve operational decision-making and data integrity.
- Manage complex content migration initiatives, architecting robust pipelines for seamless, bulk data transformation and migration from legacy systems to modern structures.
- Design and launch next-generation production systems that optimize content delivery while maintaining strict quality and productivity standards.
- Engineer automated pipelines for digital product generation, enabling the bulk creation of high-quality sessions, books, exams, question banks, and audio assets through AI integration.

Python Developer (Automation and Data Specialist)

Nagwa, Cairo, Egypt | Oct 2023 - Aug 2025

- Developed and deployed a suite of Python-based tools to automate complex data processing and content management tasks, significantly enhancing operational efficiency and reducing manual effort for content teams.
- Engineered a robust data migration pipeline to process over 800,000 JSON files. This involved creating sophisticated Python scripts for data categorization, cleaning, and transformation, including:
 - Parsing XML files to replace SVG elements with corresponding LaTeX code in JSON.
 - Converting LaTeX commands into MathLive syntax to support a modern, interactive content standard.
 - Implementing a YAML-based regex management system for precise, large-scale text and code replacements.
 - Developing specialized functions to handle edge cases and ensure high-fidelity data conversion.
- Led data-driven initiatives by performing large-scale data extraction, cleaning, and analysis using Python, enabling informed strategic decision-making.
- Authored and optimized scalable Python scripts for efficiency, ensuring seamless processing of large datasets and automating critical file management tasks.
- Contributed to open-source by publishing selected Python automation tools. A portfolio of projects is available on my GitHub: github.com/mofasuhu.
- Ensured data integrity throughout the migration and transformation processes by implementing rigorous testing, debugging, and validation protocols.

Graphics Quality Assurance Specialist, Newcomers Trainer, and Python Developer

Nagwa, Cairo, Egypt | Jan 2017 - Sep 2023

- Devised innovative drawing techniques utilizing LaTeX, Chemdoodle, Adobe Illustrator, and Adobe Photoshop.
- Orchestrated comprehensive training programs for newcomers, monitoring progress and providing ongoing support.

Quality Assurance Specialist

Egypt Man Co. for Food Industries, Cairo, Egypt | Feb 2015 - Jun 2016

- Oversaw material quality standards and documented technical specifications for production control.

Finalization Quality Assurance Specialist

Hindawi Publishing, Cairo, Egypt | Sep 2012 - Feb 2015

- Conducted rigorous quality checks to ensure published materials aligned with in-house journal styles and standards.
- Generated HTML and ePub versions of articles, enhancing accessibility and reader engagement.

Medical Customer Service Representative

Wasla Outsourcing, Cairo, Egypt | Mar 2011 - Jun 2012

- Handled client communication, issue resolution, and medical inquiry workflows efficiently.

Science Teacher

Talaea Al-Azhar Al-Sharief Institute, Cairo, Egypt | Sep 2009 - Aug 2010

- Designed science curricula and facilitated interactive STEM learning modules.

PERSONAL ACHIEVEMENTS

Hawary Shop — Full-Stack E-Commerce Platform

Personal portfolio project | Jan 2025 - Present | Hosted on Render

Designed, built, and deployed a production-ready bilingual e-commerce platform (mist-app.onrender.com) with Python, Flask, PostgreSQL, and Gunicorn — modular app/ architecture with env validation on startup.

- Full shopping flow:**
 - Browse → product image gallery → cart → promo codes → Paymob or cash-on-delivery → order tracking with automated status emails.
 - Per-governorate delivery fees with dimensional-weight calculation.
- Engagement & i18n:**
 - Wishlist, verified buyer reviews and star ratings, DB-driven Arabic/English translations with RTL and Cairo/Inter typography.
- Admin & payments:**
 - Sidebar admin UI: CRUD, reports, promo codes, translation management, wishlist oversight, and TOTP 2FA.
 - Paymob integration with strict webhook HMAC verification, refunds, and failed-transaction logging.
- Security, quality & SEO:**
 - CSP via Flask-Talisman, login lockout, scrypt password hashing, upload whitelist; pytest suite (~27 tests) covering auth, cart, checkout, SEO, and email.
 - Per-page meta, Open Graph, Twitter cards, Product JSON-LD, dynamic sitemap and robots.txt; SEO-friendly product slug URLs remain a planned follow-up.

EDUCATION

Bachelor of Science (B.Sc.) in Zoology and Chemistry

Ain Shams University, Cairo, Egypt | 2009

CERTIFICATIONS



Data Analysis Challenger Track - Udacity



Data Analysis Professional Track - Udacity



Learning Django - LinkedIn Learning



Learning Git and GitHub - LinkedIn Learning



Tableau Essential Training - LinkedIn Learning



Learning REST APIs - LinkedIn Learning



Django Essential Training - LinkedIn Learning



Django: Forms - LinkedIn Learning



Building RESTful APIs with Flask - LinkedIn Learning



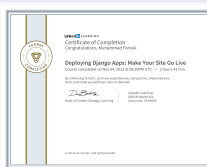
Introduction to AWS for Non-Engineers - LinkedIn Learning



Python Essential Training - LinkedIn Learning



Building a Personal Portfolio with Django - LinkedIn Learning



Deploying Django Apps - LinkedIn Learning



Become a Django Developer - LinkedIn Learning



English for Career Development Self-Paced MOOC 2022 - Canvas Credentials (Badgr)



Water analysis principles and applications - Ain Shams University



Principles and applications of advanced chromatographic techniques - Ain Shams University



Basic Business Skills Acquisition Program "BBSA" - AMIDEAST, CAME, Global Knowledge



TOEIC - Score: 585 - Amideast



TOEFL - Score: 537 - Amideast



Some Appreciation Letters

SKILLS

Technical

Python Flask Django PostgreSQL AI Agents & LLM Integration Automation REST APIs Selenium & Web Scraping
Google Apps Script Git & GitHub Data Analysis & Tableau JavaScript CSS

Soft

Systems Thinking & Architecture Cross-Functional Team Collaboration Technical Problem Solving Process & Workflow Optimization
Agile Project Execution