

MUHAMED FAHMY

Senior Full-Stack & AI Engineer

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SUMMARY

Senior full-stack and AI engineer, 7+ years shipping production systems end to end. Builds agentic LLM systems: multi-agent orchestration, tool use, agentic RAG, and retrieval over knowledge graphs. Ships custom neural networks for forecasting, classification, and graph reasoning. Python (Django, FastAPI), React and Next.js, PostgreSQL and vector search, AWS. Domains: fintech, edtech, biotech, automotive, defense. Top 3% of global engineering talent.

EXPERIENCE

Lead Engineer, Enigma

Nov 2023 – Present

Crisis engineering consultancy, rescuing stalled and failing tech projects end to end.

- Architected an agentic system automating the automotive V-model end to end for Cybertron, converting a single requirement into a complete system specification. Built as a graph of maturing nodes routing to specialized skill nodes over shared state, grounded by agentic RAG over a knowledge graph with subgraph retrieval and hybrid dense, sparse, and graph search.
- Designed the agent orchestration and tool-use layer: planning loops, task decomposition across specialized agents, memory and state passing between nodes, explicit stop conditions, and deterministic flows where the path was fixed.
- Wondercraft.ai: built agentic tool-calling that drafts video scripts and deterministic generation flows for audio and video.
- Benno.ai: built custom neural networks and a goal-seeking AI intake agent computing toward defined goals from a fixed question set, issuing follow-up questions only when they reduce distance to the goal.
- Circadia.ai: built custom forecasting neural networks wrapped as a tool for an LLM agent, plus desktop and web-browser tool wrappers enabling autonomous agent actions, including posting to X and responding to public mentions.
- Led mission-critical software delivery for Saudi Army defense operations.
- Re-architected legacy systems for ArmstrongEdu post-funding across backend, frontend, and database.
- Delivered full lifecycle recovery and launch for Oshops (React Native), Kimotive, and Psychometrica.org.

Lead Engineer, Civi (civi.digital)

Jul 2023 – Present

Remote, civic-tech platform.

- Built an NLP pipeline extracting structured semantic profiles of public political figures from legal public sources: identification, recursive scraping, leaf-first HTML parsing, PDF and DOCX parsing, with entities normalized into a custom data model and merged across sources.
- Shipped agentic LLM workflows and transformer-based NLP as core platform capabilities.
- Built the full-stack MVP from zero: React frontend, Python backend, PostgreSQL, deployed on AWS.
- Established engineering culture and CI/CD pipelines, and owned the product roadmap.

Senior Software Engineer, Toptal (Top 3% Network)

Nov 2022 – Jul 2023

- YallaPlus: built computer-vision menu extraction that parses menu images into structured platform data, and built the reservation and waitlist systems end to end.

- Private Jet Services: full-stack deployment for aviation logistics, covering API design, frontend, and infrastructure.
- Civi: architected and built the initial backend and API layer prior to joining as Lead Engineer.

Senior Software Engineer, Puffin.sh

Aug 2021 – Nov 2022

Remote, parachuted into stalled startups to unblock roadmaps and ship.

- MindTales: built AI and NLP features and led backend refactoring for a wellness platform.
- ShopX and ArmstrongEdu: payment gateway integrations (Checkout.com) and core module development.
- Hyde Park House: modernized legacy hospitality systems with a full-stack rebuild.

Software Engineer, Tarjama& (Ureed.com)

Mar 2020 – Aug 2021

Remote, core contributor across all major Django modules (wallet, services, freelancers, clients).

- Led the solo migration of Ureed's backend from a translation platform to a multi-freelancer marketplace.
- Optimized a critical initial-settings API by replacing expensive queries with a pre-built static JSON payload, drastically cutting load times.
- Eliminated N+1 query patterns and resolved a cascade-deletion bug caused by a database-level lock, traced through the ORM layer.
- Integrated Algolia for search and Checkout.com for payments, and built the timesheet system end to end.
- Built dashboards with the data-science team and delivered SQL reports for operations.

Software Engineer, Workstation Coworking Space

Aug 2018 – Mar 2020

Alexandria, Egypt, lead in-house engineer across the full development lifecycle.

- Built early machine-learning automations and digitized operations, reducing human error to near zero.
- Built a check-in and check-out Arduino card reader reporting to a Python server.
- Built a Python backend with a custom WSGI toolkit and a custom ORM implementing bi-temporality.
- Built a from-scratch desktop application in C using the Windows windowing system, plus two VanillaJS single-page apps for members and the owner.
- Automated certificate generation, cutting a seven-day manual process to minutes.

TECHNICAL SKILLS

AI & ML: LLM agents, multi-agent orchestration, tool use, agentic RAG, hybrid retrieval (dense, sparse, graph), vector search, knowledge graphs and graph reasoning (GNNs), transformers (BERT, T5), computer vision, forecasting and classification networks, NLP, clustering, PyTorch

Languages: Python, TypeScript, JavaScript, C, SQL

Backend: Django, FastAPI, Node.js, REST APIs, Celery

Frontend: React, Next.js, Tailwind CSS

Data & Infra: PostgreSQL, database optimization, Algolia, AWS (EC2, S3), Docker, Git, CI/CD

Architecture: system design, agentic pipelines

EDUCATION

Alexandria University, Computer Engineering

2017 – 2018

Alexandria University, Pharmaceutical Sciences

2015 – 2017