

Ahmed Amine Mchayaa

Backend & Fintech Engineer | Data Platforms & DevOps

Building reliable APIs, financial-data pipelines, and production infrastructure.

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PROFESSIONAL SUMMARY

Backend and Data Engineer with 6+ years across research, product development, and independent engineering. Builds Python/FastAPI services, ETL pipelines, financial-data tooling, and the infrastructure required to operate them reliably. Hands-on experience spans SQL and document databases, Docker Swarm, Ansible, CI/CD, observability, secrets management, and LLM-assisted automation. M.Sc. Computer Science, TU Berlin.

CORE SKILLS

Backend Engineering	Python, FastAPI, REST APIs, SQLAlchemy, Alembic, Go, Node.js/TypeScript
Data & Fintech	ETL pipelines, pandas, CFTC market data, BigQuery, WebSocket data, data validation
Databases	PostgreSQL, MySQL, SQLite, MongoDB, Redis
Platform & Operations	Docker/Swarm, Ansible, GitLab CI/CD, Traefik, Prometheus/Grafana, Infisical
AI & Automation	n8n, RAG, LLM agents, MCP, Ollama, multi-agent orchestration

PROFESSIONAL EXPERIENCE

Independent Software & Data Consultant 2025 – Present · Berlin (remote)

Backend, data, automation, and infrastructure work for fintech and ESG use cases.

- Developed backend and data components for a crypto-trading project in the data-collection and strategy-development phase, focusing on reproducible market-data ingestion and research workflows.
- Built a RAG-assisted reporting workflow for an ESG and sustainability consultancy, structuring source retrieval and draft generation to reduce repetitive manual preparation.
- Designed self-hosted automation that connects REST services, databases, document generation, cloud storage, email, and notifications while keeping operational controls and failure handling explicit.

Technologies: Python, FastAPI, PostgreSQL, MongoDB, Docker, n8n, RAG/LLM agents, MCP.

Research Software Engineer — Fraunhofer FOKUS Sep 2023 – Apr 2025 · Berlin

- Reduced per-request data-ingest latency from approximately 5 minutes to 20 ms on the SAND project by replacing JSON exchange with a compact binary plugin format.
- Built an energy-efficient video-encoding framework with MQTT telemetry and a Vue.js monitoring dashboard.
- Delivered 20+ GitLab CI/CD pipelines, Grafana dashboards backed by GCP/BigQuery, and adaptive-streaming plugins using Dash.js, HLS.js, and CMCD for a major German public broadcaster.

Technologies: TypeScript, Go, Vue.js, Nuxt.js, Grafana, BigQuery, GCP, Docker, GitLab CI, MQTT.

Software Developer — Idox Compliance via NorCa GmbH Apr 2017 – Dec 2020 · Berlin

- Developed customer-specific e-learning software from requirements analysis through implementation, delivery, and support.

Technologies: JavaScript, HTML5, CSS, Vue.js, SCORM, XML.

SELECTED BACKEND & FINTECH PROJECTS

CFTC Commitments of Traders Data Pipeline

github.com/Mcamin/cftc-cot

Built a Python ETL library that downloads official CFTC report archives, resolves changing archive conventions, parses ZIP contents in memory, and returns reproducible pandas datasets across years and report types. Includes raw-archive caching, explanatory-note scraping, explicit errors, packaging, and automated tests.

Python · pandas · requests · BeautifulSoup · ZIP processing · pytest

JobScraper API & Application Automation

github.com/Mcamin/JobScraper

Built a Dockerized FastAPI service that scrapes and persists job listings in MySQL and exposes filtered, paginated REST endpoints. Added Alembic migrations, structured logging, background processing, concurrency controls, and retryable self-healing description backfills; integrated it into an n8n application workflow.

Python · FastAPI · MySQL · SQLAlchemy · Alembic · Docker · n8n

Self-Hosted Infrastructure Platform

github.com/Mcamin/homelab-compose-stack

Design and operate a 5-node Docker Swarm running 50+ self-hosted services, with reusable stack templates, Ansible automation, reverse proxying, monitoring, secrets management, health checks, and tiered backups. The platform is used to run APIs, databases, automation, AI services, and development tooling.

Docker Swarm · Ansible · Traefik · Prometheus/Grafana · InfluxDB · Kopia · Linux

EDUCATION

M.Sc. Computer Science — Technical University of Berlin

2023

Final grade: 1.8 (1.0 = best)

Thesis: Detecting freezing of gait in Parkinson's patients from wrist-worn inertial sensor data.

B.Sc. Computer Science — University of Monastir, Tunisia

2015

CERTIFICATIONS

Architecting on AWS — AWS

Data Scientist Nanodegree · Full-Stack Web Developer — Udacity

Python Programmer · Data Analyst with Python — DataCamp

LANGUAGES

English — Fluent · German — B2/C1 · French — Fluent · Arabic — Native