

ABDESSAMED ZETRONI

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Summary

Final-year Data Science and ML student and working AI engineer. Builds retrieval and LLM systems that run in production under real constraints, with podium finishes in ML competitions and shipped products across web, mobile, and cloud.

Experience

JuridiLab

Full-Stack Engineer · Contract

Algeria · Remote

May 2026 – Present

- Integrated the SATIM payment gateway (CIB / Edahabia) end-to-end for event registration on a Laravel 11 + Filament backend: the register and confirm (acknowledgeTransaction) flow, ISO 8583 response-code handling, and compliant receipt PDFs, and carried it through SATIM's certification
- Built a student/intern discount system spanning the React + Vite frontend, Laravel API, transactional emails, Filament admin, and an on-site QR check-in page with signed verification URLs and staff actions

AutoSharX

Software Engineer · Part Time

UAE · Remote

Jan. 2026 – Present

- Wrote 2,300+ lines of Terraform managing 48 AWS resources for a multi-tier platform: multi-AZ VPC with public and private subnets, RDS PostgreSQL with encryption at rest and CloudWatch log exports, EC2 for co-hosted services, 3 S3 buckets (private documents, static assets, CI/CD artifacts), and a CloudFront CDN with Origin Access Control
- Built the GitHub Actions deployment pipeline: TruffleHog secret scanning and npm audit as security gates, OIDC-based AWS authentication with subject-bound IAM roles (no static keys in the repo), dynamic Cognito and CloudFront config resolution via SSM Parameter Store, and an SSM send-command deploy to EC2 with 60-second status polling
- Integrated Stripe payments via Checkout Sessions with HMAC-SHA256 webhook signature verification, idempotent order fulfillment to handle duplicate webhook deliveries, and Prisma transactions ensuring cart clearing only completes alongside successful order persistence

InovASK

Software Engineer → AI Engineer · Part Time

Luxembourg · Remote

Apr. 2025 – Present

- Built the team management module on the Next.js ERP frontend: CRUD operations with pagination and sorting, role-based member management with multi-select role assignment, and form validation via React Hook Form + Zod
- Wrote Cypress end-to-end suites covering authentication flows (register, login, password reset), tenant profile, company page, and sites CRUD; built reusable form helpers and API interceptors for test maintainability
- Designed an LLM-driven scraping pipeline using Playwright and Groq's llama-3.3-70b that takes a natural-language prompt plus target URL, emits a structured JSON scraping plan (selector and field definitions), then runs a deterministic scraper against that plan; packaged as a reusable npm module

RetailSpot

Software Engineer · Full Time

France · Remote

Jan. 2025 – Jan. 2026 (13 months)

- Built the multi-tenant authentication and authorization system: dual-token JWT with server-side session revocation, IP-based rate limiting, Turnstile CAPTCHA, login-abuse email alerts, and SHA-256 refresh-token rotation
- Designed a 5-tier role hierarchy with company-scoped MongoDB queries and escalation prevention (lower roles cannot promote to higher), plus per-company feature flags enforced asynchronously across protected routes
- Built the line-item targeting engine supporting 9 dimensions of ad delivery rules (geo with ISO 3166 country/region/city validation, device, OS with version operators, hourly dayparting, domain/key-value, size, creative, and placement constraints) across an 855-line Express route

Sehapracto

Software Engineer · Contract

Qatar · Remote

Aug. 2025 – Nov. 2025 (4 months)

- Developed membership system with subscription management and user tier functionality for Sehapracto's platform
- Integrated e-payment processing for both Android and iOS in-app purchases
- Managed AWS infrastructure including Amplify, EC2, and RDS deployments, and Route 53 domain configuration

Thynk Tech DZ

Machine Learning Intern · Internship

Algeria · Remote

Sep. 2024 – Jan. 2025 (5 months)

- Architected a two-stage semantic search pipeline using PostgreSQL and pgvector with an IVFFlat index (k-means clustered approximate nearest-neighbor probing) for bi-encoder retrieval and a cross-encoder for re-ranking, reducing compute cost while improving result relevance across 1M+ lines of legal text
- Applied HyDE and query expansion techniques to improve retrieval recall on sparse, domain-specific Algerian legal text
- Built the data pipeline: scraped 7,000+ government gazette PDFs (60 years of bilingual Arabic/French law), ran Tesseract OCR with Arabic RTL reshaping on scanned pages, and extracted hierarchical decree relationships from HTML tables, producing 2,356 structured documents totaling ~27M words
- Delivered a production RAG chatbot grounded in Algerian law, reducing hallucination risk through retrieval-constrained generation

Competitions

CohortX Task 3: Resolving Medical Conditions to ICD-10-CM Codes 	1st / 16 <i>Apr to Jul 2026</i>
<i>Kaggle Competition, CohortX Challenge at MICCAI 2026</i>	
• Won 1st of 16 teams mapping free-text medical condition names to KEEP, ASSOCIATION, and DIFFERENTIAL sets of ICD-10-CM codes drawn from a 97k-code clinical dictionary, scored on macro-F1 across the three sets (0.410 against 0.403 for 2nd place) • Beat the field with a fully deterministic, offline CPU-only pipeline (no ML, no network): dictionary indexing, a curated exact-match KEEP map, selective association/differential expansion, and hierarchical ICD block expansion; 1st-place prize of \$120, with results presented at the CohortX challenge showcase at MICCAI 2026 (October 2026)	
CohortX Task 1: Extracting Cohort Selection Criteria from Free Texts 	2nd / 10 <i>Apr to Jul 2026</i>
<i>Kaggle Competition, CohortX Challenge at MICCAI 2026</i>	
• Finished 2nd of 10 teams extracting six cohort-selection fields from PMC full-text biomedical articles, scored on a blended number, BERT-cosine, and FM3S ontology similarity plus a polarity-consistency coefficient (0.802 against 0.809 for 1st place); 2nd-place prize of \$100, with results presented at the CohortX challenge showcase at MICCAI 2026 (October 2026) • Reframed the task as citation linkage rather than text extraction: the gold answers come from each article’s underlying ClinicalTrials.gov trial, so I recovered that trial through the citation graph (cited-PMID to NCT reverse index) and trained a logistic-regression ranker to pick the correct trial among cited candidates, where structural citation features decisively beat content and semantic features	

Projects

Vocaperso - Books & Vocabulary 	<i>Flutter, NestJS, Terraform, Stripe, RevenueCat, PostHog</i>
• Independently designed, built, and shipped a vocabulary learning mobile app to both the App Store and Google Play, integrating a library of 78k+ books as in-app content • Architected and deployed the full backend and cloud infrastructure using NestJS and Terraform • Integrated subscription billing across web, Android, and iOS using Stripe and RevenueCat	
Algiers Stock Exchange 	<i>Next.js 16, Convex, TradingView lightweight-charts, Resend, PostHog, Cloudflare</i>
• Independently designed, built, and deployed a public market-data viewer covering 27 years of trading sessions, the DZAIRINDEX charted from its 2008 base, and every listed security across five exchange compartments • Engineered scheduled ingestion pipelines on Convex that scrape multiple HTML feeds and parse bulletin PDFs, reconciling overlapping sources into a single normalized store of sessions, per-ticker prices, and index history • Implemented interactive financial charts with custom technical indicators (SMA 50/200, Bollinger Bands, 52-week H/L, volume MA) and a localized weekly digest email with one-click List-Unsubscribe via Resend • Shipped a trilingual UI (English, French, and Arabic with full RTL support) using next-intl, plus product analytics with PostHog dashboards and Cloudflare proxy for bot protection and rate limiting	

Education

The National Higher School of AI <i>Data Science and Machine Learning</i>	Algeria <i>2022 – 2027 (final year)</i>
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Certifications

Data Scientist Certificate 	DataCamp · Apr. 2026
AWS Cloud Practitioner (CLF-C02) 	DataCamp · Dec. 2025
Cybersecurity Professional Certificate 	Google · Oct. 2023
TCF – French Proficiency (C1) 	Institut français d’Algérie · Nov. 2025

Technical Skills

Frontend: TypeScript, React, Next.js, TailwindCSS, Flutter
Backend: Node.js, NestJS, FastAPI, PHP, Laravel, PostgreSQL, MongoDB, Convex
AI & ML: Python, PyTorch, Hugging Face, Scikit-learn, Pandas, FAISS, pgvector, llama-cpp, OpenCV, RAG, LLMs
DevOps & Cloud: Docker, Terraform, AWS, GitHub Actions
Testing: Cypress, Jest
Other: Git, Stripe, RevenueCat, PostHog, Resend