

# Abdelhaq KHARROU

Data Scientist

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## Summary

**Former Telecom Engineer turned Machine Learning Specialist passionate about low-cost, privacy-conscious AI solutions.**

Brings 10+ years of IT experience and advanced training in ML and data science (Udacity, Omdena). Recently contributed to building a Healthy Eating Index (HEI) using NHANES data with Omdena. Currently focused on exploring ways to empower local businesses through web applications and secure, efficient ML/LLM solutions tailored to internal data and operational needs.

## Work experience

### Machine Learning Engineer (Open Source Contributor)

*Omdena – Local Chapter Challenges | Oct 2024 – Apr 2025*

#### Chronic Disease Risk Prediction (NHANES, U.S.):

- Engineered a single Healthy Eating Index (HEI) feature from NHANES data (dietary) using USDA databases (FPED, FNDDS) and official HEI guidelines.
- Developed a reusable Python package to compute HEI scores for modeling purposes.
- Reviewed research papers and domain resources to inform feature design.

#### Forest Fire Prediction & Early Warning (Uttarakhand, India):

- Set up development environment using Anaconda and project YAML configs.
- Used firedpy package to acquire and preprocess burnt area fire data for model input.
- Contributed to data processing and literature-based model exploration

### Freelancer Cloud Engineer & Cloud Integrator

*Self-employed | Aug 2020 – Now*

**Designed and deployed a Progressive Web App (PWA) for Euromove Déménagements (France)** using ReactJS, AWS Lambda, API Gateway, DynamoDB, CloudFront, and the Serverless Framework, leveraging CloudFormation templates for automated deployments and upgrades.

- Achieved a 70% reduction in paper-related costs via digital document management
- Enabled faster customer request handling
- Improved ease of use by centralizing all resources in one app to manage move flows and related documentation

#### ERP/CRM deployment (Dolibarr) for multiple clients: Ajial Library, Aifa Agri, K. Pièces Auto, Aswaq El Ayachi

- Enabled clients to save 100% on recurring software license costs
- Improved resource planning and inventory tracking
- Automated operations, saving 10–20 hours weekly
- Delivered scalable deployments using Dolibarr modular architecture

## Core Network Engineer

*Zhongxing Telecommunications Equipment – ZTE | 2014–2017*

- Part of a 6-member team responsible for deploying and expanding HLR/HSS infrastructure for over 22 million subscribers.
- Monitored KPIs to ensure stable operations and reported abnormal system behaviors.
- Supported capacity scaling by deploying Linux-based server boards.
- Conducted integration testing with Intelligent Networks (IN), reporting on impact and transition duration to ensure seamless service continuity for 22 million subscribers.

## Project Engineer

*Société Boudenib Industrie – SBI | 2011–2012*

- Oversaw construction and electrification of telecom sites for INWI
- Acted as client liaison during progress reviews and strategic meetings

## Skills

- **Programming Languages & Frameworks:** Reactjs, NodeJs/ExpressJs, Python.
- **Machine Learning:** SageMaker, Boto3, AutoGluon, PyTorch, XGBoost
- **Compute:** EC2, Lambda, Elastic Beanstalk, ECS, EKS, Docker, DockerHub
- **Storage:** S3, EBS, EFS, Glacier, RDS (MySQL), DynamoDB, Redshift
- **Content Delivery & CDN:** CloudFront, AWS Amplify
- **Security, Identity & Compliance:** IAM, AWS KMS, AWS Shield, WAF, ACLs, Security Groups, VPC
- **Networking & Content Delivery:** Route 53, API Gateway, Reverse Proxy, Auto Scaling, Load Balancer
- **Monitoring & Management:** CloudWatch, CloudTrail, X-Ray, SNS
- **Developer Tools / CI-CD:** AWS CodeBuild, GitHub Actions, Travis CI, AWS CLI, EB CLI

## Certifications & Education

- **AWS Machine Learning Fundamentals** – Udacity (2024)
- **AWS AI Programming with Python** – Udacity (2023)
- **AWS Cloud Developer Nanodegree** – Udacity (2022)
- **Front-End Developer Nanodegree** – Udacity (2019–2020)
- **State Engineer in Telecommunications & Networks** – ENSA Tanger (2011)

## Languages

- English: Advanced
- French: Advanced
- Arabic: Native

## Interests

- Traveling, Volunteering, Reading