

ANAS ABERCHIH

AI Engineer/Data Scientist

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Work Experience

LLM/NLP Engineer Intern

Aug 2024 – Oct 2024

AI/NLP/LLM Engineering Experience

- Internship focused on an end-to-end project to develop a comprehensive translation model for Darija (Moroccan Arabic).
- Developed an end-to-end pipeline that successfully generated high-quality translations by merging three models: NLLB, GPT-4o, and Seamless.
- Quantized models for enhanced efficiency and speed, implementing LoRA and QLoRA techniques; authored [two medium articles](#) to share insights and methodologies.
- Fine-tuned the "No-Language-Left-Behind" (NLLB) model, achieving a **40% improvement** over the original model in translation accuracy.
- [Hosted](#) the model on Hugging Face, resulting in over **100 monthly downloads** and increasing visibility in the NLP community.
- Technologies used: **Python** for overall development, **Weights & Biases** (wandb) for real-time tracking, **LoRA/QLoRA** for model quantization, **Huggingface** and **Transformers** for model management, and **BLEU/ChrF++** as evaluation metrics.

Projects

RAG for CPU

June 2024 – July 2024

AI Engineering Experience

[Source code](#)

- * An advanced RAG system designed to run on a regular PC with CPU capabilities, I used various tools and APIs to make it happen.
- * stack used: **Langchain/Python** for the code and overall development, **ChromaDB** for storing the data, **HuggingFace**, **cohere** APIs for an embedding and reranking model, respectively, and **Groq** API for calling Llama-70B LLM.

Fine tuning FLAN-T5 LLM (backed by DeepLearningAI)

March 2024 – May 2024

AI engineering experience

Course

- Applied Fine-Tuning techniques, and **RAG** to enhance the model's performance to summarize dialogues
- stack used: **AWS** for training the model, **Python/Langchain** for fine-tuning, **BLEU**, **ROUGE** metrics for evaluation.

Solar Energy Prediction

April 2023 – May 2024

Machine Learning experience

[Source Code](#)

- A machine learning prediction model that predicts the weekly production of solar energy.
- Powered by the **LSTM** architecture mixed with the **Attention mechanism**.
- stack used: **50hertz API** for solar energy data from 2010-2019 **Scikit-Learn** library for machine learning, **Numpy/Pandas** for data analysis, **Matplotlib** for data visualization.

Credit Card Fraud Detection

Dec 2023 – Jan 2024

Machine Learning experience

[Source Code](#)

- A machine learning detection model that can distinguish between fraudulent cards with 97% accuracy(88% for the minority class).
- stack used: **Scikit-Learn** library for machine learning, **Numpy/Pandas** for data analysis, **Matplotlib** for data visualization.

Education

Master in Data Science

2023 - 2025

Ibn Zohr University - Morocco

Bachelor in Computer Science & Mathematics

2020 - 2023

Ibn Zohr University - Morocco

Certifications

Oracle Cloud Infrastructure Certified Professional in Generative AI	<u>Oracle Certificate</u>
Generative AI with Larga Language Models	<u>DeepLearning.AI Certificate</u>
Introduction to Generative AI	<u>Google Certificate</u>
Neural Networks and Deep Learning	<u>DeepLearning.AI Certificate</u>

Technical Skills

Languages: Python, Java, C++
Skills: Generative AI, RAG, NLP, Fine-tuning LLMs, AI, Machine Learning, Community Outreach, Listening
Frameworks & Librairies: Scikit-Learn, Langchain, Keras, Streamlit, Django, Ollama, HuggingFace, Cohere
Clouds & Databases: AWS, Jupyter, Docker, ChromaDB, MongoDB, MySQL
Developer Tools: Postman, , VS Code, Git, GitHub, Notion

Extracurricular activities

<u>President of ITC</u>	Mar 2024 – Present
<i>Batch of 2024</i>	<i>Ibn Zohr University</i>

- Got elected to be president of the university’s IT club, being active in the IT community, collaborating between different entities and organizing talks, meetings, and technical courses for students.

<u>Vice-President of Google Developer Students Club</u>	Oct 2022 – Sept 2023
<i>Batch of 2023</i>	<i>Ibn Zohr University</i>

- Got elected to be vice-president of the university’s GDSC, organizing hackathons, tech meetings for students.

Blog Posts

<u>The Poetic Craft of PEFT: A Journey with LoRA & QLoRA)</u>	Aug 2024 – Oct 2024
<u>Supervised Fine-tuning dilemma</u>	Aug 2024 – Oct 2024
<u>Blooming of Generative Models</u>	Oct 2023 – Sept 2023
<u>Ensuring Model Estimation Validity</u>	Oct 2023 – Oct 2023