HAMZA FATNAOUI

Casablanca — hamzafatnaoui.ai@gmail.com — LinkedIn.com/in/fatnaoui — GitHub.com/fatnaoui

EDUCATION

International Academy of Civil Aviation (AIAC) Expected Graduation: Jul 2025
Masters of Engineering in Computer Science

Relevant Coursework: Data Structures, Algorithms, Software Engineering, Deep Learning, Distributed Systems, Design Patterns

SKILLS

Languages **Proficient:** Python (4yrs) **Intermediate:** C++ (3yrs) **Beginner:** SQL (1yr) - PL/SQL (1yr)
Software LangChain - Docker - PyTorch - HuggingFace - Jupyter Notebook - Linux - Git - Bash - Django - Keras - Scikit-Learn

EXPERIENCE

Software Engineering Intern - **Forges de Bazas**, Casablanca, MA Jul 2024 - Sep 2024

- Developed a Python script to communicate with the Groq API, automating Q&A extraction from unstructured documents
- Improved processing speed by 25% through pipeline optimization
- Designed a pipeline to fine-tune GPT and LLaMA models, reducing training time by 20%
- Leveraged GPT-2 and Python to generate accurate, contextually relevant answers for real-world applications

Software Engineering Intern - **Eagle Eye**, Casablanca, MA Jul 2023 - Sep 2023

- Built a client interaction system using NLTK, improving natural language understanding for client queries
- Analyzed large text datasets to extract insights, enhancing client engagement by 20
- Implemented tokenization and classification pipelines to improve text processing accuracy
- Developed a real-time facial recognition system using OpenCV and KNN, achieving 90% detection accuracy
- Optimized image processing and classification workflows with OpenCV and KNN, reducing processing time by 15%

MENTORSHIP

ML Tutor - **IT club**: *Programming - PyTorch - ML algorithms - API deployment* Jul 2023 – Sep 2023

PROJECTS

Building a Large Language Model from Scratch - *Team Project (∼30 hours)* - *GitHub* Oct 2024

- Used PyTorch, Transformers, NLP, and fine-tuning principles to build a scalable transformer-based LLM architecture
- Developed robust pipelines for data preprocessing, tokenization, and large-scale training
- Enhanced model performance by 20% through fine-tuning techniques inspired by GPT and BERT

Fuel Efficiency Prediction - *Personal Project (∼10 hours)* - *GitHub* Jul 2024

- Used PyTorch and neural networks to build a predictive model for vehicle fuel efficiency based on real-world datasets
- Designed and trained a multi-layer neural network to analyze features achieving 15% higher prediction accuracy

Film Review Sentiment Analysis - *Personal Project (∼10 hours)* Sep 2023

- Used TF-IDF and NLP techniques to classify film reviews as good or bad, achieving 90% classification accuracy on test data
- Developed a pipeline leveraging TF-IDF for vectorization, improving sentiment analysis performance
- Enhanced scalability and efficiency by using hashing hashing method and batching, reducing memory usage by 30%

ACTIVITIES

Manara Summer Trainee (250 selected from 12,500 applicants) Mar 2023
IEEEXtreme 17.0 (8th place among Moroccan teams in the prestigious IEEEXtreme 17.0) Oct 2023

LANGUAGES

• **English:** Professional Working Proficiency • **French:** Professional Working Proficiency • **Arabic:** Native