Seif ATTOUI

Senior Machine Learning Engineer

☎ +33 7 52 86 36 97 | ✉ seif.attoui@outlook.fr | ⚲ Paris, France | 🔗 seif-attoui | ⚲ github.com/seifou23i

ML Engineer with 4+ years of extensive experience in designing, developing, and deploying cutting-edge AI solutions for top-tier enterprises. With a strong foundation in mathematics, software engineering, and deep learning, I have a proven ability to translate complex theoretical concepts into performant, scalable, and production-ready ML pipelines. Deeply focused on Deep Learning (DL) and Large Language Models (LLMs). Certified in cloud computing (GCP, Azure) and experienced in distributed systems for creating large-scale ML pipelines.

Experience

Senior Machine Learning Engineer *Palaiseau, France*
IRT SystemX *Nov 2020 - Present*
- **Collaborated on multiple industrial/R&D projects** related to AI for major companies such as **Nvidia**, **Michelin**, **Orange**, **Dassault**, **Naval Group**, **SNCF** and **RTE**. See the Projects (IRT SystemX) section for more details.
- **Led workshops** to gather and analyze clients' technical needs and provide regular updates on project progress.
- **AI topics**: LLM, NLP, RLHF, Computer Vision, Deep Learning, Time-series forecasting and Anomaly detection.

Machine Learning Intern *Lyon, France*
IRT SystemX *Mar 2020 - Sep 2020*
- **Designed and developed** an Intelligent Transportation System (ITS) to regulate traffic based on time series forecasting for Lyon metropolis.
- **Achieved** a **52% improvement** in results by developing a traffic-specific data balancing approach (See my published paper for details).
- **Technologies**: Python, PyTorch, scikit-learn, XGBoost, REST APIs, D3.js, Docker, Git.

Data Science Apprenticeship *Algiers, Algeria*
Volkswagen Group *Sep 2018 - Jun 2019*
- **Designed and developed** an intelligent warehouse management system (WMS) for spare parts.
- **Developed** a multi-platform system that integrates heuristics and forecasting models (Optimization and Deep Learning), resulting in a **40% decrease** in manual management time.
- **Technologies**: Python, TensorFlow, SQL, .Net, Bootstrap, Jquery, Git.

Education

Claude Bernard University *Lyon, France*
Masters of Science (MSc), Data Science (**GPA 4.0**) *Sep 2019 – Sep 2020*

Higher National School of Computer Science: Top engineering school in Algeria *Algiers, Algeria*
Masters of Engineering (MEng), Mathematics & Computer Science (**Graduate with very good, Highest Honors**) *Sep 2014 - Jun 2019*

Projects (IRT SystemX)

- **Developed and deployed customized** open-source **LLMs** with **RAG** systems, improving efficiency in document information retrieval and validation, code generation, and writing enhancement.
- **Developed a domain-specific French virtual assistant**, leveraging **NLP** techniques for intent recognition, entity extraction, and dialogue management (Dassault)
- **Developed** a novel hybrid methodology integrating deep neural networks for time series forecasting and advanced optimization models to optimize a tire co-extrusion process (Michelin)
- **Designed and developed** a Python library for quantifying uncertainty in time series forecasting and anomaly detection (Naval Group)
- **Designed and developed** an incident management system based on multivariate anomaly detection and time series forecasting, incorporating a human-in-the-loop approach (Orange)
- **Contributed to the development** of an open-source framework that emulates physical simulators using neural networks (Git repo) (RTE, Nvidia)
- **Implemented** RL agents for intelligent network management in diverse systems, including power grids, railways, and Air Traffic Control (RTE, SNCF, Dassault).

Skills

- **Machine learning:** Deep Learning (Transformers, GAN, RNN, LSTM, CNN, GNN, AE), Ensemble Learning (XGBoost, Random Forest, Gradient Boosting), LLM, NLP, RL (PPO, A3C, DQN), Clustering.
- **MLOps:** GCP, Azure, Kubeflow, Airflow, MLflow, DVC, K8s, Docker, CI/CD/CT, Git.
- **LLMs:** Langchain, ChromaDB, Milvus, Hugging Face, LoRA, RAG, Vector Databases, Sentence Transformers, FAISS, LlamaIndex
- **Programming: Proficient ->** Python (PyTorch, TensorFlow, Transformers, NumPy, Pandas, scikit-learn, XGBoost), C, C++, CUDA, REST API, Shell, SQL/NoSQL, Pyspak. **Familiar ->** Falsk, Kafka, Hive (SQL)

Certificates

- **Google Cloud Platform (GCP)**: **Professional Machine Learning Engineer** (Credential link)
- **Microsoft Azur:** **Azure Data Scientist Associate** (Credential link)

Languages

French: Bilingual	**English**: Full Professional Proficiency	**Arabic**: Native