

Abdelillah Serghine

Algeria |  serghine-abdelillah |  abdelillah-serghine |  serghine.site |  a.serghine@esi-sba.dz |  +213552085776

Interests

Machine Learning • Deep Learning • NLP • LLMs & RAG • Computer Vision • MLOps • Optimization for AI Systems • Healthcare and Security AI Applications

Education

Higher School of Computer Science (ESI-SBA) - Sidi Bel Abbès, Master and State Engineer in AI and Data Science Sept 2023 – Jul 2026

- **Coursework:** Machine Learning, Deep Learning, AR/VR, NLP, Big Data, Advanced Networks, Computer Vision and Image Processing, Computer Architecture, Project Management, Advanced Databases

University of Adrar - Adrar, Bachelor's Degree in Computer Science Sept 2021 – June 2023

- **Coursework:** Data Structures and Algorithms, Networks, Operating systems, OOP (Java), web development

Experience

AI Research Intern, ÉTS, Montreal, Quebec, Canada - Remote Mar 2026 – Present

- Scientific Research on the Intersection of AI and Cybersecurity.
- Integrating Conditional Variational Auto Encoder (CVAE) for data augmentation which lead to an increase in F1-score of DistillBert transformer from 74% to 99%.

Software Engineer Intern, Sonatrach, Adrar Sept 2024 – Sept 2024

- Developed a mini python application for data visualization of oil production optimizing decision making
- Explored the IT Department and its roles also the company architecture
- Discovered the the management systems used to reduce the company costs

Technical Team Member, Alphabit Club, Sidi Bel Abbès Sept 2023 – Oct 2025

- Developed user friendly section of a web page using Nextjs and Tailwind-css for AlphaAI event

Research and Projects

Paperly : LLM-based Scientific Paper Summarizer Github

Python, RAG, Agentic RAG, GraphRAG, ChromaDB, MLflow, Gradio

- Developing an LLM tool that helps academics extract and summarize informations from research papers,
- Using **MLOps** to manage experiments, track model performance, and facilitate dynamic updates to system components such as prompts and embedding models.

Fast Neural Image Style Transfer Github

Python, PyTorch, CNN

- Built a **PyTorch TransformerNet** for fast neural style transfer using **VGG19** perceptual losses (content & style).
- Trained on **1k WikiArt images** with custom **DataLoaders**, residual **CNN** blocks, and **Gram-matrix** style loss.
- Optimized & tested on **NVIDIA Tesla T4**, delivering real-time stylization performance.

COVID-19 X-ray Segmentation (Transfer Learning) Github

TensorFlow, NumPy, scikit-learn

- Applied transfer learning with TensorFlow and Keras for automated chest X-ray classification and lung segmentation using the COVID-19 Radiography Dataset.
- Combining **ShuffleNetV2** for **COVID-19 X-ray** classification and U-Net for lung segmentation.
- Achieved a notable improvement in classification accuracy (**98%**) and segmentation performance.

Healthcare Assistant : Recommendation-based system Github
Python, Pandas, Scikit-learn, Streamlit, conda
 • Applied association rule mining (ECLAT, Apriori, FP-Growth) to analyze 239k+ prescription records, uncovering patterns and building scalable models for pharmacy and healthcare integration.

Heart Disease Detection : Github
Joblib, Pandas, Seaborn, Scikit-learn, Gradio
 • feature encoding, correlation analysis, and **z-score** normalization on a heart disease dataset and used **SVM (55%), Decision Tree (83%), KNN (89%) Gaussian Naive Bayes (90%)** and made a comparison.

Skills

Languages: Python, C, Java, SQL, JavaScript, HTML/CSS, R, LaTeX
AI: Jupyter Notebook, NumPy, Pandas, Matplotlib, PyTorch, TensorFlow, Scikit-learn, RAG, LangChain, Gradio, ChromaDB
Tools: Docker, Git, Linux, MLflow, Airflow, Kafka, Spark, Conda, NetworkX
Others: Streamlit, Folium, Rasterio, ipyleaflet, Github

Volunteer

Graphic Designer, Designed UI/UX pages for CTF writeups platform and social media posts for Hackini event Shellmates Club
Organizer, Organized in the AlphaAi event ensuring seamless event running and guidance of participants Alhpabit Club

Hackthons and Events :

DevFest 2023, DGD SBA
 • Designed UI/UX pages for a mobile app to protect childrens, classed in top 3 teams
Aiquest quantum, DGD SBA
 • Solving challenges and developing ML models with focus on optimizing them using Quantum Techniques
Ishakchdb, ISDBI
 • Developed an AI agent using **Langchain** to analyze real-world financial contracts (e.g., Ijarah MBT)
 • built an AI-powered question-answering chatbot using **RAG and Gemini API**, allowing users to ask open-ended questions about AAOIFI standards
 • Designed a multi-agent architecture that : Extracts key clauses from AAOIFI standards, Suggests improvements using contextual AI logic and Validates updates for Shariah alignment and compliance consistency

Awards and Certificates

Classed in the top 10% students class 2023 Sept 2023
TCF Tout public : B1 (396) Dec 2024
Agile Foundations, LinkedIn Nov 2025
Supervised Learning with scikit-learn, DataCamp Sept 2025
Working with the OpenAI API, DataCamp Aug 2025
Introduction to Data and Data Science, 365 Data Science Nov 2024
The Machine Learning Process A-Z, 365 Data Science Nov 2024
Intro to AI, 365 Data Science Nov 2024
Green Digital Skills, INCO Jul 2024
Introduction to Generative AI , Google Mar 2024
Credentials : [Link](#)