

Sarra ARAB

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SUMMARY

Fourth-year Artificial Intelligence student at The National Higher School of Artificial Intelligence in Algiers, specializing in Machine Learning (ML), Deep Learning, Computer Vision (CV), and Natural Language Processing (NLP). Skilled in developing and deploying AI systems for image classification, object detection, satellite imagery analysis, speech recognition, and text retrieval. Experienced with advanced techniques including Vision Transformers, Convolutional Neural Networks (CNNs), Generative Adversarial Networks (GANs), Retrieval-Augmented Generation (RAG), Embedding Models, and Transfer Learning. Proficient in Python, JavaScript, and frameworks such as React, Flask, and Flutter. Successfully delivered AI projects across education, healthcare, agriculture, and environmental sectors. Strong problem-solving, communication, and project management skills, with the ability to adapt quickly to new technologies and deliver high-quality results under strict deadlines

EDUCATION

Data Science & Artificial Intelligence

Sep 2021 - Jun 2026 (Expected)

The National Higher School of Artificial Intelligence, Algiers

[Curriculum Link](#)

TECHNICAL SKILLS

Programming Languages:

Python, C++, C, Java, Kotlin, Swift, Dart, R, JavaScript, PHP

Data Science & AI Techniques:

- Machine Learning (ML), Deep Learning (DL)
- Natural Language Processing (NLP), Computer Vision (CV)
- Speech Processing, Data Mining
- Stochastic Modeling, Predictive Modeling, Statistical Analysis
- Time Series Forecasting, Clustering, Dimensionality Reduction
- Transfer Learning, Embedding Models, Retrieval-Augmented Generation (RAG)

Web Development:

- HTML5, CSS3, React.js, Vue.js, Node.js, Laravel, REST APIs
- UI/UX Design, MySQL, Oracle

Mobile Development:

- Flutter, Kotlin (Android), Swift (iOS), Dart

Version Control & DevOps:

- Git, GitHub, GitLab, Docker

Databases:

MySQL, Oracle, No SQL

EXPERIENCE

ALGERIAN SPACE AGENCY | Internship

Ouled Fayet, Algiers — Sep 2024 – Oct 2024

- Applied advanced GeoAI techniques (Vision Transformers, CNNs, GANs, Self-Supervised Learning) to process and analyze satellite imagery for forest mapping, land cover classification, and crop health monitoring.
- Developed robust preprocessing pipelines integrating radiometric, geometric, and topographic corrections, improving image quality.
- Enhanced model generalization with innovative data augmentation techniques (GAN-based, CutMix, TTL).
- Collaborated in hackathons focusing on AI-driven solutions for forest classification and wheat field mapping using transfer learning and domain adaptation.

HACKATHONS

AGRI-CHALLENGE | Algiers — Jun 2024

- Built 7 classification models for tree species identification using a 3.8k-image dataset.
- Achieved 79% accuracy with a fine-tuned ResNet pre-trained model.
- Awarded **Second Place** for best model performance.

SHESEM | Oran — Apr 2024

- Developed a machine learning platform (SVM, KNN, Random Forest) for early pregnancy risk detection with 89% accuracy.
- Designed a Flutter-based mobile app to connect pregnant women with gynecologists, simplifying healthcare management.

PROJECTS

Predicting Wildfires in Béjaïa — Winter 2024

- Developed real-time wildfire prediction models using Decision Trees and Random Forests, applying advanced data mining preprocessing techniques.
- [GitHub Link](#)

Predicting Power Consumption in Tetouane, Morocco — Spring 2024

- Predicted energy consumption across 3 city zones using ANN, LSTM, Naïve Bayes, and other ML models.
- [GitHub Link](#)

Speech Recognition for Darija and Kabyle — Spring 2024

- Fine-tuned OpenAI's Whisper model for transcribing North African languages.
- Collected audio data and transcriptions to enhance recognition accuracy.
- [GitHub Link](#)

Plant Disease Classification — Summer 2024

- Used ResNet with transfer learning to classify plant diseases from leaf images.
- [GitHub Link](#)

Dhakirate-Al-Djazair: Algerian History Education Platform — Fall 2025

- Developed an educational platform using LLMs and RAG for interactive multilingual content delivery.
- [GitHub Link](#)

AI System for Startup Proposal Filtering — Winter 2025

- Built a multilingual system for categorizing and filtering innovative startup proposals using embedding models and clustering algorithms.
- [GitHub Link](#)

Ma3ridy ~ Galleria

- Founded Algeria's first platform connecting small businesses and artisans with customers.
- [Website Link](#)

Stockily

- Developed a warehouse management system using Laravel to streamline inventory management.
- [GitHub Link](#)

Bladna

- Created a cultural web platform promoting Algerian heritage to global audiences.
- [GitHub Link](#)

SOFT SKILLS

- Strong communication and interpersonal skills for collaboration with teams and stakeholders.
- Excellent time management and organizational skills, adept at managing multiple projects simultaneously.
- Problem-solving mindset with the ability to generate innovative solutions for complex challenges.
- Quick learner, adaptable to changing technologies and environments.
- Proficient in managing and executing tasks with precision to meet project deadlines.