BELMILOUD MAROUA

AI and Data Science Engineer

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PROFILE

- Artificial Intelligence and Data Science Engineer with proven experience in end-to-end AI pipelines—data acquisition, preprocessing, modeling, evaluation, and deployment.
- Proficient in statistical modeling, data visualization, and exploratory data analysis using Pandas, NumPy, Matplotlib, Seaborn, and Power BI.
- Skilled in machine and deep learning with PyTorch, TensorFlow, and Keras, covering supervised, unsupervised, and transfer learning.
- Experienced in natural language processing, including practical work with large language models (LLMs) and clinical text mining for real-world healthcare applications.
- Hands-on with genetic programming and large-scale data processing using Hadoop, Spark, and MapReduce.
- Technically adept in Front-end development, with practical experience in Python, JavaScript, React, Next.js, Flutter, and Firebase for the creation of responsive, cross-platform applications.
- Effective in Agile environments, with strong problem-solving, teamwork, and project coordination skills.
- Proficient in SQL and NoSQL databases, with UI/UX design experience using Figma and Canva.

EXPERIENCE

Jan 2025 – July 2025

AI & Data Science Intern | CASNOS | Algiers, Algeria

- Developed an end-to-end system for predicting cardiovascular medical acts 8000+ real Algerian patient reports. Utilized OCR for text extraction, clinical NLP for contextual understanding, and deep learning for multi-label classification, Achieved over **90% accuracy** on unseen data, reducing manual errors and improving decision-making efficiency.
- Built a generative AI agent using a RAG-based LLM (Mistral via Ollama) for data augmentation, addressing class imbalance.
- Managed the full pipeline: data preparation and preprocessing, modeling, evaluation, and Docker-based deployment.
- Built a full-stack interface with Next.js (frontend) and Django (backend).
- Contributed to multiple production AI tools in an Agile team, improving cross-departmental performance.

May 2025 – Jun 2025

Freelance Front-End Developer | Remote

- Developed the front end of website " Kid's Save " for a startup using React and Tailwind CSS, ensuring a responsive and user-friendly experience.
- Designed the UI/UX of a digital medical platform "DSI Infirmier" using Figma, aimed at helping nurses manage and track electronic health records efficiently.

Academic Experience – ESI SBA

- Logical Errors Correction – Genetic Programming Approach : Applied genetic programming using the DEAP framework to detect and correct logical errors in software across 100+ code samples, providing adaptive solutions that outperformed conventional debugging techniques by reducing errors.
- Alzheimer's Disease Classification : Explored 3 deep learning models : LeNet, UNet, and CNN-LSTM for Alzheimer's disease classification using 6,400 MRI brain images, achieving up to 92% accuracy and contributing to advancements in diagnostic precision and Alzheimer's research.
- Interactive PDF Chat Application with Conversational AI : Built an AI-powered app using NLP (RAG) and machine learning to enable natural language queries and efficient data extraction from PDF documents.
- AeroDelay : Developed a model to forecast flight delays using historical data. Explored semi-supervised learning to improve prediction accuracy and support real-time decision-making for travelers and airlines.
- Social Benefits ESI SBA | Team Leader : Developed the front-end of the Social Benefits ESI SBA website using Next.js and Tailwind CSS. The platform streamlines employee benefits management with intuitive tools, for efficient administration.
- Developed : a mobile application (DAWAA) : Contributed to the design, front-end, and backend integration of DAWAA, a mobile app for locating medical drugs in nearby pharmacies and accessing drug information. Built using Flutter, Dart, Firebase, and Figma for UI/UX design.

ACADEMICS

- Baccalaureate in Mathematics with High Honors (2020).
- Passed the National Competitive Exam in Math-Computer Science (2022).
- Engineer's and Master's Degree in Artificial Intelligence and Data Science | Higher School of Computer Science (ESI-SBA) | Sidi Bel Abbès, Algeria (JULY 2025).

LANGUAGES

- ARABIC : NATIVE
- FRENCH : B2 (INTERMEDIATE)
- ENGLISH : C1 (ADVANCED LEVEL)