

# Chaima MASSAOUDI

COMPUTER SCIENCE ENGINEERING STUDENT

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## PROFILE

*Enthusiastic final-year Computer Science Engineering student with a strong passion for Data Science and Artificial Intelligence. Seeking a new opportunity to leverage my skills and gain hands-on experience in a dynamic and innovative environment.*

## EDUCATION

**Computer Science Engineering degree | 2022-present**

*Polytechnic School of Sousse (EPS)*

**Pre-engineering in math and physics | 2019-2022**

*Faculty of Science of Sfax (FSS)*

## WORK EXPERIENCE

**Deep Learning Research & Engineering Intern**

*Laboratory of Medical Technologies and Imaging | June 2025 – august 2025*

Led a seizure-detection research project using ECG signals. Designed and optimized deep learning models (CNN, LSTM, GRU, Transformers) with Python (PyTorch/TensorFlow) and a custom preprocessing pipeline (R-peak detection, RR-interval, HRV features). Achieved 92% F1-score, 90% sensitivity, and 94% specificity.

**Keywords:** Python, Deep Learning, PyTorch, TensorFlow, CNN, LSTM, GRU, Transformers, Signal Processing, ECG, HRV Features, R-peak Detection, Biomedical AI, Model Evaluation

**Machine Learning Intern**

*MineBeat | Jul 2024 – Sep 2024*

Collected and preprocessed social media posts and user interactions to build a music recommendation dataset. Developed a recommendation system using Python (TF-IDF, Sentence-BERT, Scikit-learn) with genre/subgenre filtering to enhance personalization, improving recommendation relevance by 22% and click-through rate by 18%.

**Keywords:** Python, Scikit-learn, NLP, TF-IDF, Sentence-BERT, Recommendation Systems, Cosine Similarity, Data Preprocessing, Social Media Data, User Interaction Analytics

**Development & Data Analytics Intern**

*Mood&Food App | Jun 2024 – Jul 2024*

Developed and optimized front-end interfaces using React.js, improving user experience. Created interactive dashboards (Streamlit, Plotly) to track user behavior and KPIs. Processed data with Python & Pandas to deliver actionable insights on retention, trends, and growth.

**Keywords:** React.js, Python, Pandas, Streamlit, Plotly, Data Visualization, KPI Tracking

## PERSONAL PROJECTS

**Energy Forecasting Using Machine Learning & Optimization**

- Predicted solar panel energy output using weather and historical data.
- Trained models including Linear Regression and XGBoost; evaluated with MAE and RMSE.
- Integrated optimization (CVXPY) for resource-efficient energy scheduling.
- Reduced forecasting error (RMSE) by 12% compared to baseline.

Keywords: Python, Scikit-learn, XGBoost, Linear Regression, CVXPY, Optimization, Energy Forecasting, Time Series Analysis

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## Analyse de Sentiment sur Twitter

Développement d'un modèle pour classifier les sentiments des tweets à l'aide du dataset Sentiment140.

Extraction de caractéristiques avec TF-IDF et construction d'un modèle de régression logistique.

## Brain Tumor Segmentation with Vision Transformers

Implemented a Vision Transformer (ViT) model in Python/PyTorch for brain tumor segmentation on the Kaggle LGG MRI dataset. Preprocessed MRI scans and masks to enhance training and achieved a Dice score of 0.87, outperforming CNN-based baselines (BCE loss).

**Keywords:** Python, PyTorch, Vision Transformers (ViT), Medical Image Segmentation, MRI, Dice Score, BCE Loss, Computer Vision, Deep Learning

## ACHIEVEMENTS

- Promising Women Program Hackathon 2024 – 1st Place
- IEEE Xtreme 2024 – National Top 5%, International Top 8%
- TWISE Night Challenge – Winner: "From Genome to Green Gold" project on ergothioneine production using NGS and bioprocessing.

## VOLUNTEER EXPERIENCE

### Light of Hope Project

*Organized and managed the "Light of Hope" project aimed at improving the environment and experiences of pediatric patients.*

Renovated a pediatric ward playroom to create a welcoming environment. Organized educational and entertainment sessions on first aid and road safety for children and families. Collaborated with community members and professionals to ensure successful program execution.

## CERTIFICATIONS AND COURSES

- Intro to Programming
- Python
- Pandas
- Intro to Machine Learning
- Intermediate Machine Learning.
- Data Visualization
- **Supervised Machine Learning: Regression and Classification by Stanford University on Coursera**
- **Unsupervised Learning**
- **Recommenders, Reinforcement Learning**
- **Introduction to Data Engineering**
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## SKILLS

- **Programming:** Python, SQL, PL/SQL, JavaScript
- **Libraries & Tools:** Pandas, NumPy, Scikit-learn, TensorFlow, PyTorch, Matplotlib, Seaborn, Jupyter Notebook, React.js
- **ML Techniques:** Data Cleaning, Feature Engineering, Model Evaluation, TF-IDF, Sentence-BERT, Recommendation Systems, Time Series Forecasting, XGBoost, Linear Regression,
- **Soft Skills:** Problem-solving, Team Collaboration, Communication
- **Deep Learning:** CNN, LSTM, GRU, Transformers, Vision Transformers (ViT), Computer Vision, Image Segmentation
- **Big Data & Analytics:** Hadoop, HDFS, Apache Spark, Streamlit, Plotly, Data Visualization, KPI Tracking

## LANGUAGE

English

Arabic

French

