

# SIRINE MAAROUI

## DATA SCIENTIST

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### EDUCATION

**Engineering Degree** National School of Advanced Sciences and Technologies of Borj Cedria (ENSTAB)  
Advanced Technologies Engineering - Option: Industrial Systems and Competitiveness Sept 2021 to July 2024  
**Keywords:** Artificial Intelligence, Mathematical Modeling, Probability, Optimization, Statistics, Big Data, Python, C/C++, IoT, Project Management

**Pre-Engineering Studies** Preparatory Institute of Engineering Studies of Tunis (IPEIT)  
Scientific Preparatory cycle: Mathematics & Physics Sept 2019 to July 2021  
**Keywords:** Mathematics, Physics, Python Programming, SQL

### PROFESSIONAL EXPERIENCE

**Programming & Robotics Instructor** SMART Robotics  
Part-time Jan 2024 to present  
• Crafted and updated robotics and coding curriculum for kids aged 8-16 using Python, C/C++, Arduino.

**R&D Data Scientist** DeepVolt  
End of Studies Internship Feb 2024 to June 2024  
**Project: AI-Powered Predictive Modeling for Optimal EV Charging Station Placement**  
• Designed and implemented a predictive model to optimize EV charging station placement by accurately forecasting utilization rates.  
• Utilized ensemble machine learning techniques along with advanced hyperparameter tuning and feature engineering, resulting in a 45.5% improvement in prediction accuracy.  
• Integrated the model in the DLIA platform with AWS Services.

**Tiny ML Intern** Smart For Green  
Summer Internship June 2023 to Aug 2023  
**Project: TinyML powered Computer Vision for Wildfire detection system**  
• Developed and deployed a wildfire detection system with 70% accuracy using Tiny ML and Computer Vision on microcontrollers with LoRaWAN.

**Data Science Intern** Business & AI  
Summer Internship June 2022 to Aug 2022  
**Project: Machine Learning for Cars Predictive Analytics**  
• Built an end-to-end ML pipeline for predicting used car prices, achieving an R<sup>2</sup> score of 0.96.  
• Executed web scraping using BeautifulSoup and requests to gather data.  
• Applied Python libraries (Scikit-learn, Pandas) to preprocess data, build regression models, and fine-tune performance.

### SKILLS

**Programming Languages** Python (Libraries: Numpy, Pandas, Scikit-learn, Seaborn, Matplotlib, PyTorch), MATLAB, SQL, C/C++  
**Data Science & AI** Data Preprocessing, Data Analysis, Data Visualisation, ML, Predictive Modeling, Feature Engineering  
**Tools & Platforms** Anaconda, Jupyter Notebook, Excel, Google Colab, Power BI, VS Code, Git, QGIS, AWS SageMaker, Pack Office, Jira  
**Languages** English - C2 Proficient (EF SET), French, Arabic

### ACADEMIC PROJECTS

**Graph Neural Networks (GNN) for Drones Swarm path planning and optimization** ENSTAB  
Synthesis Project II Jan 2023 - May 2023  
• Researched GNN applications for optimizing UAV path planning.

**Forest fires prediction system** ENSTAB  
Synthesis Project I Jan 2022 - May 2022  
• Developed an SVM-based wildfire prediction model, achieving 78% accuracy in forecasting forest fires.  
• Designed and deployed a web interface using Flask for real-time predictions and user interaction.

### PERSONAL PROJECTS

**Music Effects on Mental Health**  
Data Science Project Aug 2024  
• Analyzed and visualized listener habits and mental health data to assess music's impact.  
• Built a predictive model with 90.49% accuracy using a StackingClassifier (RandomForest, SVC, KNeighborsClassifier, Logistic Regression).  
• Engineered features and addressed class imbalance, achieving balanced F1-scores across all classes.

**National Robotics Competitions** Electronix ENSTAB  
Autonomous challenges 2023  
• Engineered autonomous robots securing 2nd and 5th places in competitions.

**Smart Glasses for visually impaired** Electronix ENSTAB  
Hackathon Sept 2023  
• Created smart glasses for real-time object detection using ESP-CAM and a FOMO model with 70% accuracy to detect prominent street signs.

## ONLINE CERTIFICATES

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### Data Analysis Nanodegree

*Nanodegree*

- **Keywords:** Python, Data manipulation, Data Visualization, Data Analysis, predictive modeling, EDA

**Udacity**

Nov 2022

## VOLUNTEERING

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### Deputy Marketing Manager

*Executive member*

- Crafted compelling content and promoted events, contributing to successful ENSTARobots National Events.

**Electronix ENSTAB**

Oct 2023 to June 2024

### Media & Content Creation Co-Lead

*Executive member*

- Led media and content creation efforts, enhancing club visibility and engagement.

**Google Developer Student Club ENSTAB**

Oct 2023 to June 2024

### General Secretary

*Executive member*

- Managed records and facilitated communication for problem-solving contests.

**ACM ENSTAB**

Oct 2022 to June 2023

## HOBBIES

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Ping Pong, Content Creation, Robotics