

SARRA AYED

JUNIOR DATA SCIENTIST

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EDUCATION

DATA SCIENCE ENGINEERING DEGREE (EQUIVALENT TO A MASTER'S DEGREE)

September 2019 - November 2024

Private Higher School of Engineering and Technology ESPRIT

Relevant coursework: Mathematics, Machine Learning, Statistics, Operations Research, Deep Learning, Probability, Optimization Algorithms

CERTIFICATIONS

COURSERA AWS & DEEPLARNING.AI - Generative AI with Large Language Models

January 2024

COURSERA DEEPLARNING.AI - Natural Language Processing

November 2023

NVIDIA - Applications of AI for Anomaly Detection

October 2023

NVIDIA - Building Transformer-Based Natural Language Processing Applications

October 2023

HACKATHON - Sequence-Based Predictor for The Impact of Mutation On Protein Stability

May 2023

TECHNICAL SKILLS

Programming: Python, R, SQL, Matlab, Scala, Django, Java, C, C++.

Libraries and Tools: NumPy, pandas, sci-kit-learn, TensorFlow, PyTorch, Keras, Matplotlib, Seaborn, Plotly, OpenCV, NLTK.

Machine Learning Techniques: Regression, Classification, Clustering, Cross-Validation Techniques, Object Detection, Time Series Analysis.

Data Analysis and Visualization: Tableau, Power BI, Data Visualization, VBA, Excel, Apache Airflow.

Big Data and Databases: MySQL, NoSQL, Oracle, Hadoop, Spark, Hive, Pig, Apache Cassandra.

Cloud and DevOps Tools: Microsoft Azure (Machine Learning Studio), AWS (SageMaker), Jenkins, Docker, Git, MLOps, Grafana, Prometheus.

Other: Pack Office, Canva.

PROFESSIONAL EXPERIENCE

DATA SCIENTIST INTERN

June 2023 - August 2023

Esprit Tech RDI

Developed a model for predicting Ethereum prices, using **HMM**, **LSTM**, and **Deep Reinforcement Learning** techniques.

Applied algorithms, including the **Backward Forward algorithm**, the **Baum-Welsh algorithm**, and the **Viterbi algorithm**, to improve prediction accuracy.

Discovered that the Deep Reinforcement Learning model had a higher **Mean Absolute Percentage Error (MAPE)** compared to **LSTM** and **HMM models**.

Refined the model to address these challenges, gaining valuable insights into the complexities of financial forecasting.

FULL STACK DEVELOPER INTERN

June 2022 - August 2022

Anypli

Created a web survey application using **Laravel** for the backend and **MySQL** for the database, demonstrating full-stack development skills.

Integrated **AJAX**, **jQuery**, and **Blade Template** to build interactive features, creating a more interactive user experience.

Identified areas for improvement in user interface design during project testing, leading to further iterations and refinements.

Gained experience in building scalable applications and optimizing for improved user response rates.

ACADEMIC PROJECTS

AI-DRIVEN PROJECT RISK MANAGEMENT ASSISTANT | [LINK](#)

September 2023 - November 2023

Extracted data from two PDFs (PMI and PMBOK) to gather key insights for training an assistant model focused on project risk management.

Used **OCR** to extract images from the PDFs and then applied **NLP techniques (Spacy, KeyBert, textacy)** to analyze the extracted data for relevant risk factors.

Utilized **graph visualization** and **GNN model** to map relationships: Generated network graph with **95% accuracy** in depicting dependencies.

Developed a model for project risk management, using a structured knowledge base with **taxonomic** and **non-taxonomic relationships**, as the training dataset.

DATA-DRIVEN JOB RECOMMENDATION SYSTEM | [LINK](#)

January 2023 - June 2023

Led a project team of 5 members to collect and analyze job-related data, mining, classifying, and analyzing precisely **40,000 job descriptions and resumes**.

Managed the data collection process with **Scrapy** and **BeautifulSoup**, ensuring data was extracted accurately from 34 different sources.

Used **KMeans clustering** and **Sentence Transformers** to organize data, achieving an **85% accuracy rate**. This improved analysis and recommendations.

Developed a **recommendation system** using **content-based filtering** that matches candidates to specific job offers for improved hiring outcomes.

Other Projects: [Chronic Kidney Disease Prediction](#), [Yoga Poses Classification](#), [Time Series Project](#), [Customer CLTV Prediction and Segmentation](#), [Ventilator Optimization](#), [Grape Variety Morphology Study](#), [Energy Consumption Prediction](#), [Temperature Forecasting with SARIMA](#).

PUBLICATION

Ethereum Price Prediction Model Comparison    [SSRN](#) | [LINK](#)

January 2024

LANGUAGES & INTERESTS

LANGUAGES: **Arabic** (Mother tongue), **English** (Fluent), **French** (Advanced), **German** (Beginner).

INTERESTS: Reading, Gaming, Oil Painting, Chess.