Sarra Ayed

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PROFESSIONAL EXPERIENCE

Esprit Tech - Ariana, Tunisia   **June 2023 - August 2023**

Data Scientist Summer Internship

Ethereum price forecasting using advanced Hidden Markov Models and LSTM-based Recurrent Neural Networks

Accomplishments:

- Spearheaded the application of *Hidden Markov Models (HMMs)* from Pomegranate to predict Ethereum prices. Employed the *Backward-Forward*, *Viterbi*, and *Baum-Welch algorithms* to uncover elusive market dynamics.
- Harnessed the potential of *Recurrent Neural Networks (RNNs)* with the *Long Short-Term Memory (LSTM)* architecture to capture the intricate nuances of Ethereum price trends. Outperformed Pomegranate HMMs with a substantial *23%* enhancement in prediction accuracy.
- Our innovations were quantified through a substantial *15%* reduction in the *Mean Absolute Percentage Error (MAPE),* providing tangible evidence of the transformative influence of LSTM-based RNNs on Ethereum price forecasting.

Anypli - Monastir, Tunisia   **June 2022 - August 2022**

Full Stack Developer Summer Internship

Survey Web Application Development

Accomplishments:

- performed an extensive needs analysis, laying the groundwork for building a robust backend system using **PHP** for coding and **MySQL** for the database
- Employed *Laravel's Blade templating* in synergy with *jQuery* to artfully design an immersive frontend. This frontend was elevated to new heights through the seamless integration of *AJAX.*

TECHNICAL SKILLS

Programming Languages : Python, R, C#, Java, SQL, JavaScript, Scala, PHP, C, HTML, CSS.
ML/AI : TensorFlow, Keras, Scikit-learn, PySpark, NLTK, OpenCV, BERT, SpaCy, Pandas, NumPy, matplotlib, Seaborne, ggplot2.
DataBase : MySQL, SQL server, MongoDB, NoSQL Databases.
Frameworks and Libraries : Django, React, .NET, SpringBoot, Laravel, jQuery.
Tools : Apche Spark, Kafka, ETL Tools, CI/CD, Git, Swagger, Postman.
Operating System : Windows, Linux.

ACADEMIC PROJECTS

Career Center Platform - MindMatch   **January 2023 - June 2023**

Accomplishments:

- Led data acquisition by expertly scraping diverse datasets from LinkedIn, job boards, and company websites, amassing 40,000+ job descriptions and resumes using *Scrapy* and *BeautifulSoup*.
- Employed data science methods, including *KMeans clustering* and *SentenceTransformers*, for meticulous data profiling, enhancing the understanding of the dataset's structure and content.
- Developed a *Content-Based Job Recommendation Systems*, alongside *fine-tuning* an *OpenAI*-powered chatbot using our data.

Chronic Kidney Disease Diagnosis   **October 2022 - December 2022**

Accomplishments:

- Led data quality enhancement efforts by conducting D*ata Cleaning*, V*isualization*, and D*ata Preparation* for predictive modeling.
- Conducted an in-depth comparison of various classification models, including *KNN*, *Naive Bayes*, *SVM*, *RF*, and *Decision Tree*, to identify the most suitable approach for the task.
- Thoroughly assessed model performance using *key metrics* while implementing the *CRISP-DM* methodology.

Grape Variety Morphology Study   **November 2022 - December 2022**

Accomplishments:

- Worked with a team of five students, applying *advanced data preprocessing*, including *KNN-based outlier detection*, to ensure data quality.
- Conducted in-depth *correlation analysis* on Kecimen and Besni grape characteristics, offering valuable insights into their relationships.
- Utilized both *Linear and Generalized Linear Regression methods* to reveal intricate feature relationships with grape variety types, contributing to a deeper understanding of the subject matter.

EDUCATION

Private Higher School of Engineering and Technology - ESPRIT   **September 2019 - June 2024**
Data Science Engineering Degree
Relevant courseworks : Machine Learning, Statistics, Big Data Analytics, Deep Learning, Probability

Monastir Faculty of Science   **September 2018 - June 2019**
Bachelor's degree Computer Science
Relevant courseworks : Algorithms, Programming (C, Java, Python), Operating Systems, Computer Architecture

Hedi Khfecha Monastir High School   **September 2017 - June 2018**
High School degree Experimental Sciences
Relevant courseworks : Biology, Chemistry, Physics, Mathematics (Algebra, Geometry, Calculus)

Languages : *Arabic:* Native proficiency · ***English:*** *Advanced* · ***French:*** *Intermediate level*
Extracurricular Activities : ***Reading:*** *Passionate reader* · ***Gaming:*** *Enthusiastic gamer* · ***Painting:*** *Talented painter*