Anis Ben Houidi

FINAL YEAR IT ENGINEERING STUDENT

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Portfolio
La Manouba, Tunisia

I'm an IT engineering student with a strong interest in AI and data. I like tackling tough problems and finding ways to look at them from new angles. My approach is both analytical and practical—I enjoy figuring out how things work and coming up with solutions that are a little outside the box. I'm looking to jump into projects where I can learn a lot and actually see the impact of what I'm working on.

EDUCATION

2021- Present

National School of Computer Science - ENSI
Engineer's Degree, Computer Science - Specialty in Artificial Intelligence

2019 - 2021

Nabeul's Preparatory Institute for Engineering Studies

PROFESSIONAL EXPERIENCE

July 2024 - August 2024

Talan Tunisie
Artificial Intelligence Intern
Worked within a team in Talan's R&D Center in the research and development of a predictive digital twin for in-silico CRISPR-Cas9 Applications

- Developed the architecture for the predictive models pipeline.
- Handeled reference sequence genome data from NCBI, including GenBank .gbff and .fa large files.
- Used GANs to generate gRNAs from target genes.
- Used Microsoft's Azimuth model to evaluate gRNA binding efficiency .
- Used PyBio to implement sequence alignement search algorithms like BLAST and FASTA.
- Automated BLAST with Selenium on NCBI BLAST site
- Used a local LLama 3.1 8B with Multi-modal RAG to predict the complications from mutated protein products.
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Keywords: **LLMs, Multimodal RAG, GANs, Genome search algorithms**

June 2024 - July 2024

CognoRise InfoTech
Machine Learning Intern (Remote)
Performed exploratory data analysis EDA, Data Mining and Implemented maching leanring models for different types of data and tasks.

- Conducted exploratory data analysis (EDA) to understand data patterns and trends.
- Developed and implemented various machine learning models within a comprehensive data pipeline.
- Utilized key techniques and tools, including:

Keywords: **Data Mining, Feature Engineering, Exploratory Data Analysis (EDA), Machine Learning**

PROJECTS

Big data User Behavior Analysis

Used a dockerized Hadoop cluster to simulate a distributed big data e-commerce user behavior environment

- Used docker containers to setup a distributed multi-node HDFS environement.
- Used MapReduce to filter raw data, preparing it for analysis.
- Used Pig and Spark for data cleaning and creating structured datasets.
- Used Hive to run complex queries and extract insights on buying patterns.

Keywords: **Hadoop, Docker, HDFS, MapReduce Apache PIG, Apache Spark, Apache Hive, SQL, Python**

Business Intelligence Data Pipeline and Visualization

Integrated Apache NiFi with Power BI to automate the ingestion, processing, and visualization of data from a CSV file, enabling real-time insights through dashboards.

- Performed data ingestion with Nifi from a csv file.
- Used Nifi to transform data and output the processed data to MySQL database.
- Used Power BI to connect to the database and perform dashboarding and visualizations

Keywords: **Apache Nifi, Power BI, MySQL**

Dynamic Cryptographic Key Rotation with Deep Reinforcement Leanring

This was a project done in DeepFlow AI Hackathon as a strategy to counteract quantum cyber attacks, winning 1st place amongst 30 teams from the technical jury

- Tested different SVM kernels on the KDD cyber attacks dataset for identifying threats.
- Deployed a custom gym environment to simulate key rotation based on network status.
- Implemented a key generation algorithm.
- built and trained a deep Q-network (DQN) agent with a Boltzmann policy to optimize key rotation decisions based on attack patterns
- Created a real time visualization of the simulation in matplotlib

Keywords: **Python, Deep Reinforcement Learning, SVMs, Gym, Matplotlib**

Radiology Platform for AI-assisted Disease Diagnosis

A radiology platform aimed at the medical sector to coordinate between healthcare practitioners and assist in medical diagnosis from medical scans with deep learning.

- Used Django’s template engine to help in developing the frontend.
- Used MySQL for the database.
- Helped with implemented a multi-user two-factor authentication system with OTP authentication.
- Developed an image classification CNN model in tensorflow.
- Integrated the model in the Django backend.

Keywords: **Python, Django, Convolution Neural Networks, MySQL**

Static React Portfolio Deployed on Vercel

- Used React and TailwindCSS to create a portfolio showcasing my projects, experience and academic journey.
- Deployed the project on Vercel.

Keywords: **React, JavaScript, TailwindCSS, Vercel**