



Amin Bouhamed

Software Engineering Student

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PROFESSIONAL EXPERIENCE

Data Science Intern

07/2023 – 09/2023

R&D Group Esprit , Tunisia

- Contributed in the development of a hybrid recommendation system that integrated collaborative filtering and content filtering approaches to provide a comprehensive and personalized experience .
- Implemented collaborative filtering algorithms to identify similar users based on their past interactions with products and achieved 0.68 score of Mean Absolute Error
- Employed content filtering techniques to analyze product attributes and descriptions, suggesting items that match the user's search criteria and reached 0.7 as cosine similarity

Keywords: Python , Content filtering , Collaborative filtering , Machine Learning

Django Developer

07/2022 – 09/2022

3S , Tunisia

- Played a pivotal role in developing the backend architecture for an E-Commerce platform, leveraging Django, SQL Server, and MongoDB.
- Achieved a remarkable 12% enhancement in page load speed through strategic database query optimizations, resulting in a substantial uplift in user experience. resulting an amplification in the platform's responsiveness.

Keywords: Django , Djongo , Pymongo , SSMS , MongoDB , SQL , NoSQL

EDUCATION

Exchange Computer Science Student

10/2023 – present | Schmalkalden, Germany

Hochschule schmalkalden University of Applied Sciences

Information technology Engineer Specialized in Data Science

09/2021 – present | ariana, Tunisia

Higher School of Engineering and Technologies of Tunisia

Mathematical and physics diploma

09/2019 – 06/2021 | sfax, tunisia

Preparatory Institute for pre-engineering studies of sfax

Rank 521 out of 2003

PROJECTS

Conceptual graph-based chatbot for PRM issues

09/2023 – 11/2023

- designed and developed a knowledge graph-based chatbot to revolutionize project risk assessment.
- Architected a custom LayoutParser Model to effectively extract valuable insights from the PMBOK book, leveraging POS tagging, Named entity recognition, Semantic role labeling and Dependency parsing.. for text refinement.
- Exploited the power of state-of-the-art RAKE and query2triplet models to identify relevant keywords and generate triplets with an accuracy of 96%.
- Constructed a novel knowledge graph employing Deep Graph Library DGL, paving the way for a more comprehensive understanding of project risks and Integrated it into a robust chatbot implemented with flask.

Keywords: Python , Pyteserract , NLP , Ontology learning, LLM , Graph neural network GNN , Pytorch, DGL, Keyword Extraction , Named entity recognition , Entity linking, POS tagging , Dependency parsing .

Reverse vending machine

01/2023 – 05/2023

- Created a high-performance robotic system to sort, identify, and measure bottles and cans, linked with a Django-based web application integrated with PostgreSQL, incorporating a real-time gamification system.
- Fine-tuned the "centernet hg104 512x512" pre-trained model for object recognition, achieving 95% detection accuracy, surpassing YOLOv7 by 2%.
- Employed the InceptionV3 model for brand identification using feature extraction technique, reaching 97% accuracy rate.
- Generated a comprehensive dataset comprising height, width, and brand information from object detection results. This dataset was used to train an Artificial Neural Network ANN model, achieving a 98% accuracy in classifying bottle volumes.

Keywords: Python, Django, PostgreSQL, Computer vision, image segmentation, image processing, objet recognition, feature extraction, raspbian os .

SKILLS

Programming Languages:

Python , R , Schell Scripting , C , SQL

Packages/Frameworks :

numpy , pandas , matplotlib , PyTorch , Keras , Scikit-Learn , Open-cv , Scrapy ,NLTK , FastAPI , Django

Databases :

PostgreSQL , MongoDB , SQL Server , MySQL

Data Science/Machine Learning:

Spark , Hadoop, web scraping , Computer vision , image captioning , NLP information retrieval, documents embedding , transformer-based models , neural networks , Entity Linking, Data mining , data engineering , Statistics , ETL pipelines , web scraping , statistical analysis , feature engineering , data visualization , Linear Algebra , Time series , Hypothesis testing

Tools :

Linux , Git , Docker ,LaTex

CERTIFICATES

- Natural Language Processing Specialization By Coursera & DeepLearning.ai
- Applications of AI for Anomaly Detection Using Generative Adversarial Networks By NVIDIA
- Building Transformer-Based Natural Language Processing Applications By NVIDIA

EXTRACURRICULAR & VOLUNTEERING

Inceptum Junior Enterprise

- Senior Member of commercial development department at "INCEPTUM" junior enterprise.
- Senior Member of project department at "INCEPTUM" junior enterprise

03/2022 – 09/2023 | ESPRIT

Deepflow Esprit

Executive board member

- led a Team of 5 members to successfully deliver an AI-based project for our partner (Faza.tn)

11/2022 – 08/2023 | ESPRIT

LANGUAGES

Arabic (native)	English (Advanced)	French (Fluent)	German (A1.2)
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