Amin Bouhamed

IT Engineering Student

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in https://www.linkedin.com/in/amin-bouhamed   ⓞ https://github.com/aminbouhamed

↖ https://aminbouhamed.github.io/portfolio

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 institue for pre-engineering studies of sfax
   Rank 521 out of 2003

PROFESSIONAL EXPERIENCE

Data Science Intern   07/2023 – 09/2023
R&D Group Esprit , Tunisia
- As an integral part of a 4-members team, I contributed in the development of a cutting-edge recommendation system for an online marketplace, driving it to achieve an outstanding 97% as RMSE.
- My Team contributions were pivotal in crafting and fine-tuning this system, ensuring its effectiveness and precision to enhance user experience.

Keywords: Python , 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

PROJECTS

Conceptual graph-based Recommendation System for PRM issues   09/2023 – 11/2023
Spearheaded the development of a groundbreaking knowledge graph and chatbot for Project Risk Management (PRM), revolutionizing the way organizations approach risk assessment.
- Engineered a custom **LayoutParser** Model to extract valuable insights from the PMBOK book ensuring the original structure ,then NLP techniques to refine the extracted text.
- Employed state-of-the-art **RAKE** model to extract relevant keywords and fine-tuned the **query2triplet** model to generate Triplets, with an outstanding accuracy reached 96% .
- Architected a graph neural network (GNN) model to build a novel knowledge-graph with 465 nodes and 1082 edges using Deep Graph Library.
- Combined a two-layers GraphSAGE model and a dotpredictor to sucessfully predict links between entities, reached interresting AUC value 93 with 0.048 as loss.
- Integrated the knowledge graph 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 .

Reverse vending machine   01/2023 – 05/2023
Engineered an intelligent Robot that sorts bottles and cans, identifies brands, and measures volume accurately.secured the 3rd place out of 200 Best projects at esprit .
- Fine-tuned "centernet hg104 512x512" pre-trained model for the object recognition , achieving an outstanding 95% detection accuracy, surpassing YOLOv7 by 2%.
- Implemented InceptionV3 model to identify brands by feature extraction technique with a remarkable 97% accuracy rate.
- Generated a comprehensive dataset ,including height, width, and brand, derived from object detection results. fueled an Artificial Neural Network (ANN) model, achieving an impressive 98% accuracy in classifying bottle volumes.
- Developed a user-friendly Django-based web application, integrated with PostgreSQL, featuring real-time gamification System

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

SKILLS

Programming Languages: (Python , R , Schell Scripting , C , SQL)

Big Data&Machine Learning: (Spark , Hadoop , Python (eg.numpy , pandas , matplotlib, Tensorflow ,PyTorch , Keras , Scikit-Learn , Open-cv , NLTK) , Computer vision , image captioning , NLP information retrieval, documents embedding , transformer-based models , neural networks , MLOps.)

Data science&miscellaneous technologies : (Data mining , data engineering , Statistics , ETL pipelines , web scraping , statistical analysis , feature engineering , data visualization , Linear Algebra , Time series , Hypothesis testing , FastAPI , Linux , GitHub , Git , Docker , Latex , Django.)

Databases : (PostgreSQL , MongoDB , SQL Server , MySQL)

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 Entreprise   03/2022 – present │ ESPRIT
consultant
- Senior Member of commercial development department at "INCEPTUM" junior enterprise.
- Senior Member of project department at "INCEPTUM" junior enterprise

Deepflow Esprit   11/2022 – 08/2023 │ ESPRIT
Project manager
- led a Team of 5 members , sucessfully delivred an AI project for our partner (Faza.tn)

LANGUAGES

Arabic	**English**	**French**	**Deutsch**
(native)	(Fluent)	(Fluent)	(A1.2)