Gacha Hamadi

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Resume

Graduate in Data Science with solid professional experience in AI development, strong IT background, and solid foundation in mathematics. Passionate about data science and developing innovative solutions to optimize processes. Currently seeking a new challenging opportunity to apply and expand my expertise on impactful projects. .

Education

Professional Master in Data Science *Sept 2022 – Dec 2024*
Higher Institute of Computer Science and Mathematics, Monastir

Bachelor degree in Mathematics and Applications *Sept 2019 – Jun 2022*
Higher Institute of Computer Science and Mathematics, Monastir

High school diploma of Technica Science *Sept 2018 – Jun 2019*
Korba

Experiences

AI Developer position *SW Consulting, Monastir*
Worked on the design and deployment of AI solutions for real-world applications, including computer vision model development, document analysis, data processing, LLM model development, and API integration. *November 2024 – Present*

- **Document classification using LayoutLMv3, combining text and layout information for structured document analysis:** Fine-tuned LayoutLMv3 for multi-class document classification using both layout and textual features, achieving high accuracy of up to 90% across diverse document categories.
  Technologies: layoutlmv3/ Image Processing / Text Processing .
- **Fine-tuned YOLO models for object detection on custom image datasets, optimizing performance :**

  Fine-tuned YOLO on annotated image datasets to accurately detect and localize custom objects, adapting the model to specific use cases through transfer learning 0
  Technologies: yolov11/ Image processing.
- **Information extraction from documents using LayoutLMv3 :** Performed information extraction from documents using LayoutLMv3, combining advanced text preprocessing techniques and image processing tools to enhance data quality and achieve an extraction accuracy of up to 96%.
  Technologies: yolov11/ Image processing.
- **Fine-tuned YOLO models for image segmentation :**The process involved preparing annotated datasets with precise masks, applying data augmentation techniques to enhance model generalization, and optimizing training parameters to improve segmentation accuracy.
  Technologies: yolov11/ Image processing.
- **Creation of an AI Conversational Agent Based on the GPT-4 Model :**Developed an AI conversational agent based on the GPT-4 model, fine-tuned through advanced prompt engineering to enable real-time interaction with users in a web application environment.
  Technologies: GPT4/ Prompt enginnering

PFE master intership *SMARTLAB, FMM Monastir*
Development of a Web Application for Real-Time Evaluation of Driver Vigilance and Attention Using Eye and Head Movement Tracking Technologies *March 2024 – Sep 2024*

- **Real-Time AI Model Development for Eye and Head Tracking** : We Designed and implemented a computer vision pipeline to detect **eye movements**, **blinks**, **gaze direction**, and **head orientation** in

real time. This step enabled the collection of relevant data for recruitment analysis. *2023-2024, ISIMM*
Technologies: MediaPipe /OpenCv/ Dlib/Fastapi /Python.

- **Developed the backend infrastructure using Django, managing user authentication, test sessions, and data storage :** To support real-time interactions and AI-powered analysis, I developed RESTful APIs using FastAPI, which enabled efficient handling of incoming requests and seamless integration of AI detection models with the web interface. In parallel, I designed and managed a PostgreSQL database to securely store user data, test sessions, and analysis results, carefully structuring the schema to optimize performance and facilitate fast data retrieval.
  Technologies: Python/ Django/ PostgreSQL.

Summer Internship *ItGateGroup, Tunisie*
Design and development of a system for fake news detection using Natural Language Processing (NLP) techniques *July 2023 – August 2023*

- **Technologies used**: BeautifulSoup/Selenium/Scrapy/sklearn/Flask/NLTK

Acadamic projects

We Care Platform: *2024*
WE CARE is a free support platform for individuals affected by cancer, providing psychological assistance to help improve their well-being
My role involves developing **MR White**, a chatbot designed to offer personalized psychological support to patients, helping them navigate emotional challenges and feel heard and accompanied throughout their journey.

- **Technologies used:** Gemini API/Random /Flask

Anomaly detection in medical images using YOLO-based object detection models. *2023*

- **Technologies used:** Ultralytics/Yolo

Vocational training

CISolutions Hackathon — IEEE CIS Chapter ISIMM Student Branch *2023, Tunisie*
First place

SDC Non-Technical Challenge — IEEE Tunisia Section *2024, Tunisie*
First place

Wie Heal challenge — IEEE WIE Infinity Group ISIMM Student Branch *2024, Tunisie*
First place

Community life

IEEE member
Treasurer of the IEEE Sight Group - ISIMM Student Branch

LANGUAGES

English/ French/ Arabic