

MOHAMED FARES LANDOULSI

AI SOFTWARE ENGINEERING

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EDUCATION

Engineer's Degree : Software engineering 2020-2023

Higher Institute of Computer Science Ariana – Engineer's Degree in completion in December 2023

Computer science Bachelor 2017-2020

Institut supérieur des arts multimédia Manouba – Bachelor Degree completion in July 2020

WORK EXPERIENCE

Junior Artificial Intelligence engineer

January, 2024 – Ongoing

Novobit – code generation project

Contributed to Developing a system to generate code in various programming languages and frameworks from user stories, enhancing developer productivity.

Responsibilities:

- **Natural Language Processing (NLP):**

Extracted relevant information from user stories using both classical NLP techniques like part-of-speech tagging and modern methods, including LLama 3, to generate descriptive text.

- **User Story Analysis:**

Analyzed user stories using SroBERTa to ensure they provided sufficient information for processing by GPT-4, enabling accurate code generation.

- **Prompt Engineering:**

Improved prompts passed to LLMs, refining inputs to achieve more precise outputs.

Generated code from Figma designs by exporting frames and translating navigation behavior between frames into code using the Figma REST API.

- **Deployment Support:**

Assisted in deploying LLama 3 on an inference server (Ollama) to ensure scalable and efficient usage.

- **Experience with LLMs:**

Closed-Source LLMs: Claude 3.5 Sonnet

Open-Source LLMs: LLama 3.0 (70B) and LLama 3.1 (405B)

Artificial Intelligence intern

May, 2023 – December 2023

Novobit – glasses for visually impaired project

This project is a subproject of a smart glasses project that aims to provide assistance for individuals with visual impairment. The whole project contains these subprojects:

Police gestures recognition, hand gestures recognition, traffic signs recognition, face recognition, **obstacle detection.**

I was in charge of the **obstacle detection** system with two of my colleagues :

- This part of the smart glasses project helps visually impaired individuals be fully autonomous in homes and outside by providing an interactive **speech recognition module** and **wake word detection** technology. The individual can ask about the environment around him and get accurate descriptions (**image captioning** model named **BLIP**) and ask questions about the scene (**visual question answering** model named **ViLT**) and search for specific objects (**GroundingDino** model). Our obstacle detection system detects obstacles using **Yolov8**, an **instance segmentation** model.

- I was in charge as well of integrating this project with an **Intel RealSense** camera model **435i** to be able to get the **depth estimation** and extract distance from the camera to the objects to improve our obstacle detection system.
- I took the responsibility of **integrating** the system as a whole on the **Nvidia Jetson Orin** card, including the other parts of the smart glasses project.

July, 2022 – November 2022

Blockchain developer intern

Opus Lab

- Have developed a decentralized courses booking system using **Solidity, Hardhat, Ethereum, Ethers, React**, applying design patterns techniques.
- Learned how to apply **Normal Factory method design pattern, method template design pattern** into a real project

Web developer intern

July, 2021 – September 2021

Innovup

- Was in charge of developing and maintaining a web application for automating postal transfer through generating appropriate templates using **Python, Flask, Docker** and **MySQL**. This project helped to fully eliminate manual repetitive tasks.

NLU/NLP developer intern

February 2020 – June 2020

iCompass

- Was in charge of developing a **chatbot** development platform based on **Rasa** Open source framework to automate the development of chatbots for both chatbot developers and non-tech users.
- Have learnt how to use **NLP, NLU** and **REST** API's in a real development project and expanded my knowledge on **MongoDB, Flask, Javascript, Scrum** and **UML**

PERSONAL PROJECTS

- FunAI : Optimizing **language models** prompts through an automatic pipeline based on **DSPy** framework, integrating cutting edges LLM tools such as **HuggingFace, Groq, Ollama, LangChain** for model inferencing and **RAG**
- Concerto : **Flask** and **React 18** Web App to match artists to venues using **Postgres, Flask-Migrate, Flask-SQLAlchemy, Docker, CI/CD**
- TuniSci : Rank professors, researchers in Tunisian universities based on h-index and i10-index **Python3, Data scraping, Scholarly, pandas**
- Naive images search engine using **Python3, pandas, numpy** using distance intersection.
- World Cup 2022 Management App using **SpringBoot, Angular 13, SpringSecurity**, having a prediction Model in **Python, Sklearn, pandas**
- Training management app using **SpringBoot, Angular 13, SpringSecurity, Swagger**
- Student management app to link students, administration, and professors of a certain university using **Flask, Python, pandas, SQLite3, SQLAlchemy, UML**

VOLUNTEERING ACTIVITIES

- **Contributing** to an active open source framework with more than 12K stars on **Github** named **DSPy** that optimizes language models prompting through meaningful code and pipelines.
- **Head Of High level programming at Freeways – 09/2021 – 08/2022** : Managing a team of students and helping them learn high level programming technologies
- **Project manager at Orenda Junior Enterprise – 08/2018 – 07/2019** : Build collaboration processes and documents such as templates for deliverables and specifications to automate the project department tasks using Agile and Scrum

CERTIFICATES

Linux Foundation

LFS170x: Blockchain

Microsoft Technology Associate

Introduction programming using Java

Coursera

Deep learning specialization

Generative Adversarial Nets

C++ for C programmers

MongoDB

MO01 Mongo Basics

M220P MongoDB for python for devs