

Firas Tlili

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Summary

Experienced Machine Learning Engineer & Full Stack Python Developer with over a decade of expertise in data analysis, machine learning, deep learning, and full-stack web development. Also served as the Omdena.com Local Chapter Leader of Tunisia, demonstrating leadership skills and a passion for mentoring and guiding others. Proven track record of delivering exceptional value to clients through a diverse skill set and a collaborative approach. Excited to contribute to your organization's mission and drive business forward.

Experience

Machine Learning Engineer

Intelligent Machines Laboratory • Gabes, Tunisia

01/2020 - 12/2022

Soccer Video Summarization Using Deep Learning:

- Successfully trained a custom deep learning model using YOLOv7 to detect soccer highlights.
- Created a Python script that effectively extracted highlights from videos.
- Developed a Django Web Application to deploy the model and build a user-friendly interface for easy access using HTML, CSS, JavaScript and Bootstrap.
- Optimized the deep learning model to improve its accuracy to achieve 90 %.
- Collaborated with a team to ensure the project was completed on time and within budget.
- Conducted extensive testing and debugging to ensure the model was functioning correctly.
- Documented the project thoroughly, including technical specifications and user manuals, for future reference.

News Video Segmentation Web Application using Deep Learning:

- Developed a video analysis application utilizing object detection, face detection, SVM classifier, and YOLOv7 algorithms to identify key features and automatically segment video reports
- Successfully built and deployed the application's backend using Python and Django, resulting in efficient and robust data processing and storage.
- Designed and implemented a responsive and visually appealing user interface for the application's frontend using HTML5, CSS3, JS, Bootstrap, and ReactJS technologies.
- Led the project's development from inception to delivery, ensuring that it met client requirements and delivered exceptional value.
- Demonstrated a strong understanding of computer vision and machine learning concepts, resulting in the application's accurate and reliable performance

Full Stack Python , ML Developer

Freelancing • Gafsa, Tunisia

01/2014 - 01/2020

- [Coronary heart disease Prediction Using Machine Learning](#)
- Obtained the BioLINCC heart disease dataset from the ioLINCC website for analysis.
- Cleaned and preprocessed the Cleveland heart disease dataset using Data Engineering processes and Pandas
- Conducted exploratory data analysis using Seaborn and Matplotlib to visualize the relationships between patient features and the occurrence of CHD.
- Developed an understanding of the importance of factors such as the number of major vessels, chest pain type, and maximum heart rate achieved in predicting CHD.
- Built a Decision Tree Classifier model using the machine learning framework Scikit-learn (sklearn) and achieved an accuracy of 90% on the test set
- Develop the frontend of the application using HTML, CSS3, React and bootstrap and the backend using Django
- **Grocery Store Management System :**

- Collaborated with a team of three developers to develop a grocery store management system using HTML, CSS, JavaScript, and Bootstrap for the front-end.
- Implemented a Python back-end to handle logic and data processing.
- Utilized MySQL as a database to store and retrieve data.
- Utilized Flask as a web server framework to serve HTTP requests from the front-end to the back-end.
- Utilized sqlalchemy module to interact with the MySQL database from the Python back-end.
- Employed Github as a version control system to maintain the codebase and track changes.
- Helped HayNour Grocery Store automate their order and inventory management processes, resulting in a cost savings of \$1000 within the first 3 months of use.
- Worked in a group of three team members and used JIRA for Scrum project management.
- **Deep Learning for Strawberry Disease Detection :**
- Implemented Data Engineering processes to clean the dataset
- Developed an IoT project to detect strawberry disease using deep learning techniques.
- Trained a custom deep learning model, YOLO v5, to detect strawberry disease by using synthetic and real data obtained from strawberry disease detection experiments.
- Deployed the trained model to detect strawberry diseases on plants in farms, allowing farmers to check their crops for diseases before harvesting them.
- Implemented the project using Python and Django for the backend and HTML 5,CSS3,bootstrap, for the frontend.
- Deploy the model in a web application using Azure DevOps
- **Build a deep learning model for lip reading:**
- Implemented Data Engineering processes to clean the dataset
- Implemented a deep learning model for lip reading using Keras, based on the 'LipNet: End-to-End Sentence-level Lipreading' paper by Yannis M. Assael, Brendan Shillingford, Shimon Whiteson, and Nando de Freitas.
- Developed the model to accurately transform lip motions into text output, which could be used to improve speech recognition technology for individuals with speech impairments or in noisy environments.
- Used Python, Django and React to build the web application and deployed the model to a server to allow users to upload videos of lip motions to be analyzed and transcribed.
- Tested the model's performance and provided documentation for users on how to use the web application and interpret the model's output.

Skills

Python, Machine Learning, Deep Learning, Data Analysis Skills, Data Visualization, Data Collection, Data Science, Front-End Development, Back-End Development, MySQL, MongoDB, Google Cloud Platform, Amazon Web Services, Project Management, Leadership Experience, Communication skills, Time management, Leadership, Bilingual

Education

Master of Engineering - Electrical and Computer Engineering

University Of Gabes · Gabes, Tunisia

06/2022

- **Graduated with Honors (GPA : 3.6)**
- **Fields Of Studies :** Advanced mathematics, Numerical analysis,Linear Algebra, Probability and statistics, Algorithms and programming, Object-oriented programming, Database management system, Sequential control of systems, Process analysis, Communication techniques,Advanced programming,Operations research and optimization,Data acquisition and transmission,Artificial intelligence,Image processing and vision industrial,Architecture and programming of embedded systems,Connected objects and communication protocols,Real-time systems,Machine learning,Entrepreneurship,Medical robotics.

High School Diploma in Computer Science

Houcine Bouzayen High School of Gafsa · Gafsa, Tunisia

06/2016

- **Graduated with Honors (GPA : 3.7)**
 - **Fields Of Studies :** Full-Stack Web Development , Data Base Management Systems , Object-Oriented Programming , Python Programming , Mathematics , Physics , Image Editing .
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Certificates

Google Cloud Professional Cloud Engineer, Huawei Certified ICT Associate : Artificial Intelligence, MTA: Introduction to Programming Using Python , Huawei Certified Specialist Associate : Storage, MTA: Introduction to Programming using HTML and CSS, MTA: Database Fundamentals, Google Cloud Professional Cloud Architect(In progress), MongoDB Associate Developer (In Progress)

Leadership Experience

- Led the Omdena Local Chapter in Tunisia, organizing and managing a team of volunteers to collaborate on social impact projects and mentoring individuals to develop their skills in data science and machine learning.
 - Coordinated with project stakeholders, including non-profit organizations and other social impact partners, to identify project goals, requirements, and constraints, resulting in the delivery of meaningful solutions that addressed real-world problems.
 - Actively participated in community building and networking events, both locally and globally, to promote Omdena's mission and to connect with like-minded individuals in the data science and AI community.
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Internships

Data Scientist Internship @ WorldQuant University :

- Completed the WorldQuant University Data Science Lab, a rigorous online program that provided comprehensive training in data science and machine learning concepts, tools, and techniques.
- Gained practical experience in data wrangling, exploratory data analysis, feature engineering, model selection, and predictive modeling through hands-on projects and exercises.
- Developed a strong foundation in programming languages such as Python and R, as well as familiarity with popular data science libraries and frameworks such as Pandas, NumPy, Scikit-learn, and TensorFlow.
- Collaborated with a diverse group of peers from around the world, participating in team projects that required effective communication, time management, and problem-solving skills.
- Applied data science principles to real-world problems, demonstrating a strong understanding of the value of data-driven decision-making and the importance of ethical considerations in data science.

Engineering Management @ Tunisian Company of Electricity and Gas :

- Managing budgets and financial records for the company.
 - Coordinating with government agencies and regulatory bodies to ensure compliance with regulations.
 - Developing and implementing new administrative processes to increase efficiency.
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Languages

English, French, Arabic

Awards

Finalist In The Tunisian Olympiad in Programming 2016, Top 4 In The Cloud Track Of The Huawei Ict Competition 2021