**Zeineb Tekaya**

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AI Engineer focused on computer vision and natural language processing, seeking an end of studies internship. Motivated to create effective AI applications that solve real-world problems. Proficient in Python with experience developing, refining, and implementing machine learning models. Demonstrated academic excellence as program valedictorian.

**EXPERIENCE**

***AI Researcher and Developer (Part-Time), OCTOMIRO September 2024 - Present***

* Designed and implemented an **action recognition system** leveraging Google AI LLM and advanced prompt engineering for detection and timestamping of worker actions in video footage. Achieved a **sensitivity of ±6 seconds** for timestamp detection with 100% action detection accuracy on videos over **1 hour long.**
* Introduced a **Gradio interface** for seamless video upload, split customization, and real-time progress tracking.

***AI Research and Development Intern, OCTOMIRO June 2024 - September 2024***

* Conducted in-depth research on **3D volume estimation and reconstruction** from single RGB-D images, benchmarking 9 techniques and integrating object-agnostic pre-trained segmentation models, achieving **92% accuracy**.
* Established a **production-ready gRPC API** for the best-performing method, optimizing data management with **S3 storage**, with an end-to-end processing time of approximately **9-10 seconds.**

***Software Engineering Intern, EMIKETIC July 2023 - August 2023***

* Conceived an **NLP-based intelligent classification system** for financial and legal documents, integrating it into a **Document Management System** with a React.js interface.

**EDUCATION**

***Engineering Degree in Computer Science & Automation 2020 – Present***

National Institute of Applied Sciences and Technologies, Tunis, Tunisia

* Achieved **Valedictorian** honors for the 3rd and 4th academic years.

**SKILLS**

* Supervised Unsupervised, and Reinforced Learning
* Deep Learning
* PyTorch
* TensorFlow, Keras
* Open3D
* OpenCV
* Generative AI
* LLM
* LangChain
* Natural Language Processing
* Quantization
* Pruning
* DDP
* FSDP
* Distillation
* PEFT
* RLHF
* Python
* C
* C++
* SQL
* Java
* JavaScript
* React
* Git, GitHub
* Docker
* SAP
* MATLAB
* LabVIEW
* AnyLogic
* Clear Communication
* Teamwork
* Problem-Solving
* Critical Evaluation
* Task Prioritization
* Detail-oriented

**PROJECTS**

* Pioneered a solution to challenging information retrieval by developing a QA chatbot that integrates diverse data sources, including user-provided documents, Wikipedia, and web searches. Leveraged LLM for enhanced usability and performance.
* Developed and optimized machine learning models for predicting student depression, achieving 98% accuracy. Conducted data preprocessing, exploratory analysis, model evaluation, and hyperparameter tuning.
* Built a model using stacked LSTM with Multi-Head Attention to forecast MAG7 tech stock prices, achieving an average test RMSE of 0.957 across seven companies.
* Automated cover letter generation using LLMs and LangChain, leveraging CV and portfolio data to assist users in generating personalized and professional documents.
* Modeled a Smart Digital Twin using AnyLogic to recreate a job shop environment in a Cyber-Physical Production System. Integrated simulation results into a machine learning model, achieving 87.65% accuracy in classifying system perturbations, and predicting impacts for process optimization.
* Developed a lung cancer detection model from CT scans using YOLO, achieving 80% precision and recall.
* Trained a predictive model for COVID-19 using clinical data and multiple machine learning algorithms. Improved accuracy and reliability through feature engineering. Achieved an overall 87% accuracy.

**VOLUNTEER WORK**

* Treasurer, IEEE INSAT Student Branch 2021 – 2022
* Treasurer, IEEE CSTC National Congress 2022
* Treasurer, IEEE SYP International Congress 2022
* 2nd Place, National Kayak Championship (Singles & Doubles) 2017 – 2020
* 2nd Place, National Double Rowing Championship 2017 – 2019
* National Kayak Champion 2013 – 2015
* National Champion in Double Rowing 2015