**Zeineb Tekaya**

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**EDUCATION**

**National Institute of Applied Sciences and Technologies** Tunis, Tunisia

Engineering Degree, Computer Science & Automation  ***September 2020 – Present***

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

**EXPERIENCE**

**OCTOMIRO**

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

* Designed and implemented a **system** leveraging Google AI LLM and advanced prompt engineering to detect and timestamp worker actions, achieving **±6 seconds sensitivity** and 100% accuracy for videos exceeding **1 hour.**
* Introduced a **Gradio interface** for seamless video upload, split customization, and real-time progress tracking.

**OCTOMIRO**

***AI Research and Development Intern 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.**

**EMIKETIC**

***Software Engineering Intern 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.

**SKILLS**

* **AI & Machine Learning:** Supervised Learning, Unsupervised Learning, Reinforced Learning, Deep Learning, PyTorch, TensorFlow, Keras, Open3D, OpenCV, LLM, Generative AI, LangChain, Natural Language Processing, Quantization, Pruning, DDP, FSDP, Distillation, PEFT, RLHF
* **Programming Languages:** Python, C, C++, SQL, Java
* **Web Development:** JavaScript, React
* **Software Development Tools:** Git, GitHub, Docker, SAP, MATLAB, LabVIEW
* **Simulation Software:** AnyLogic
* **Languages:** Fluent in French, English, Native in Arabic
* **Certifications:** Machine Learning Specialization, Deep Learning Specialization, Generative AI with Large Language Models

**PROJECTS**

* Pioneered a QA chatbot that integrates diverse data sources (user-provided documents, Wikipedia, and web searches), leveraging LLM for enhanced usability and performance.
* Optimized ML models for predicting student depression with 98% accuracy performing 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 LLM and LangChain, leveraging CV and portfolio data to assist users in generating personalized and professional documents.
* Modeled a Smart Digital Twin in AnyLogic to recreate a job shop environment. Integrated simulation results into a ML 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 COVID-19 predictive model using clinical data and multiple ML algorithms, achieving 87% accuracy with enhanced feature engineering and reliability.

**VOLUNTEER WORK & ACTIVITIES**

* Treasurer, IEEE INSAT Student Branch 09/2021 – 09/2022
* Treasurer, IEEE CSTC National Congress 03/2022
* Treasurer, IEEE SYP International Congress 08/2022
* 2nd Place, National Kayak Championship (Singles & Doubles) from 2017 to 2020
* 2nd Place, National Double Rowing Championship from 2017 to 2019
* National Kayak Champion from 2013 to 2015
* National Champion in Double Rowing in 2015