Rayan Samy RAMOUL

Research Engineer

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PROFESIONNAL EXPERIENCE

Research Engineer – LLM   **Feb 2023 — Present**
InstaDeep   *Paris, France*

- Be a **technical reference**in Machine Learning projects and implement LLM training and inference pipelines.
- Creation and maintenance of **LLM training and downstream tasks framework** with ability to train on **distributed (Data Paralellism/Model Paralellism) setups** and using (Jax/Torch).
- Models deployment, CI/CD, supervising technical aspects of multiple projects.

Confirmed AI Engineer   **Sep 2021 — Feb 2023**
Quant AI Lab   *Paris, France*

- Developed custom **deep learning models** tailored to meet client-specific requirements and encapsulated them in user-friendly APIs with React and Streamlit interfaces.
- Managed and mentored a technical team, ensuring the adherence to best software engineering practices, resulting in a **40% reduction in code defects**.
- Trained and deployed multiple deep learning models on AWS, leading to a **12% improvement in model efficiency** and a **15% reduction in computational costs**.
- Actively engaged with clients, assisting in the sales process, and addressing their AI-related challenges. This led to successful contract signings and established the company as a trusted AI solution provider in the market.

Research Intern in Deep Learning   **Mar 2021 — Sep 2021**
Dynamic Meteorology Laboratory, Sorbonne University   *Paris, France*

- Led the successful evaluation of various AI techniques, achieving an **accuracy rate of 92%** in classifying spatial organizations of low clouds observed via satellite imagery.
- Utilized an Xarray dataset of geo satellite collections, implementing the Image- Embedding technique with pre-trained models and fully-connected MLPs.
- Applied advanced AI methods, including Image-Embedding, PCA, and Deep Convolutional AutoEncoders, to enhance cloud classification accuracy.
- Successfully achieved the primary internship objectives, including the **discovery of previously unidentified cloud classes, signifying a groundbreaking contribution to the field of cloud classification**.

Research Intern in Machine Learning   **Jan 2018 — Jun 2018**
Laboratory of Research in Artificial Intelligence   *Algiers, Algeria*

EDUCATION

Master in Artificial Intelligence and Computer Vision (IMA)
Sorbonne University (ex: Pierre and Marie Curie) / Telecom Paris   *Paris, Sep 2021*

- Grade : 15/20, **High Honors**. **Ranked at the top** of the internship grades with 18/20 and jury's congratulations.
- Relevant Coursework : Deep Learning and Images Interpretation, Advanced Image Processing, Computer Vision, Medical Imaging.

Bachelor in Mathematics and Computer Science, *U.S.T.H.B*   Algiers, Algeria

SKILLS

Tools and Languages	Python, **PyTorch**, Git, **Jax**, Hydra, **PyTorch Lightning**, Pandas/Polars, CI/CD, LaTeX, Linux and Bash, **Docker and docker-compose**, NoSQL, SQL, FastAPI, Streamlit, Tmux, Vim.
Quantitative Research	Deep Learning, Machine Learning, **Distributed Training (multi-host TPU, Multi-GPU, DDP, FSDP, Data Parallelism, Model Parallelism)**, **Large Language Models (LLMs)**, Computer Vision, Reinforcement Learning, Mathematical optimization, Mathematical Modeling, Advanced Algorithmic.

OPEN SOURCED PROJECTS

Machine Learning Project Template (with best practices) (Repository)
ViT Pytorch Implementation (Repository)
Deep Reinforcement Learning for Chess (Repository)
Mutli-Agent RL for hunt environement (Repository)
Find: File explorer app based on NLP helping to organize and retrieve documents (Repository)

LANGUAGES

French (Native) | **English** (Full professional working proficiency) | **Arabic** (Basic level)