Youssef MAHFOUD

Double Diplôme : Génie Industriel, IA & Data Science / Master Informatique: SIIA

??*0*??

+33 7 45 50 23 49 youssef.mahfoud@imt-atlantique.net LinkedIn Massy, île de france, France

Formation Académique

•Master Informatique (Systèmes interactifs, intelligents et autonomes) *Sept. 2024 – Présent*

Programme Conjoint: IMT Atlantique, ENIB, UBO, ENSTA, Brest, France En cours

Cours notables : ??*1*??

•Cycle d'ingénieur en Génie Industriel : IA & Data Science *Sept. 2022 – Présent*

ENSAM Meknès, Maroc En cours

Cours notables : ??*2*??

•Cycle préparatoire intégré *Oct. 2020 – Juin 2022*

ENSAM Meknès, Maroc Terminé

Cours notables : ??*3*??

•Baccalauréat Sciences Mathématiques B *Juin 2020*

Lycée Technique, Errachidia, Maroc Obtenu

Expériences Professionnelles

•Stage PFE: AI Software Engineer (Dassault Systèmes)

Vélizy-Villacoublay, France Fevrier 2025 – Août 2025

- Designed and implemented a robust C++ module for dynamic product loading and in-depth processing of over twenty assembly features, optimizing memory management and ensuring smooth execution in industrial environments.
- Automated generation of a high-definition synthetic dataset exceeding 8,000 renders with systematic camera parameter variations, reducing data creation time by 60
- Developed and integrated custom generative shaders for real-time Physically Based Rendering (PBR) materials using OpenGL/DirectX pipelines, enhancing visual fidelity in 3D workflows.
- Led deployment of a secure bidirectional communication pipeline between a 3D Whiteboard WebApp and native C++ application, automating material application and cutting asset preparation time from hours to minutes.

•Stage PFA: AI Research Assistant (Centre internationale d'intelligence artificielle)

Rabat, Maroc Juin 2024 – Août 2024

- Led the development of a **3D Regional Proposal Network (RPN)** with a custom loss function using **PyTorch** and **CUDA**, enhancing 3D bounding box predictions from 2D annotations and improving model precision by 2.3
- Engineered a **Neural Radiance Field (NeRF)**-based volumetric reconstruction pipeline to automatically estimate intrinsic and extrinsic camera parameters from bilateral mammographic views, enabling high-fidelity 3D volume generation for medical imaging.
- Optimized GPU computations with custom CUDA kernels for loss calculation and backpropagation, accelerating training throughput and enabling efficient handling of large-scale synthetic and real datasets including ScanNet.
- Packaged the 3D RPN module as a **Python/C++** library with PyTorch bindings, incorporating unit tests and performance benchmarks to ensure robustness and seamless integration into existing machine learning workflows.

•Stage: IA Génerative & Infographie (TNC - thenext.click)

Casablanca, Maroc Juillet 2024 – Septembre 2024

- Led the design and deployment of three **Power BI dashboards** automating data pipelines with Azure Data Factory, reducing manual analysis time by 70% and ensuring **real-time KPI monitoring** for cost per click, click-through rate, and ROI.-* Integrated generative AI workflows using Comfy UI and Stable Diffusion XL, collaborating with cross-functional teams to accelerate visual asset creation by 50% and enhance designer satisfaction by 30%.-* Developed advanced DAX measures and secured data governance with Azure AD, enabling precise financial insights and maintaining strict **data access control** aligned with project requirements.

•Stage: R&D - Ingénieurie et Conception (LEAR Corporation)

Rabat, Maroc Juillet 2023 – Août 2023

- Designed complex geometries for injection molding using CATIA V5 and NX, leveraging **Mold Tooling** and **Part Design** environments to predict and reduce defects, cutting prototyping iterations by 40%.-* Developed a **Python** pipeline with pandas, NumPy, and scikit-learn to automate whiplash test data analysis, enabling precise **regression modeling** for injury prediction and guiding safety improvements per ISO 6487 standards.

Projets Académiques

??*8*??

Compétences

??*9*??

Certificats

- **Deep Learning Specialization** – Coursera (DeepLearning.AI)
- **Machine Learning Specialization** – Coursera (DeepLearning.AI)

Langues

- **Anglais** – Bilingue | **Français** – Courant | **Arabe** – Langue maternelle | **Espagnole** – Débutant

Activités Parascolaires

- **Chef de la céllule Médiatisation et IT à l'ADE et 4 autres Clubs** *2021 – 2024*
- **Membre du club Informatique et Robotique** *2022 – 2024*
- **Chef de la céllule CraftX et Aerospace chez Space Club ENSAM** *2022 – 2023*