Lyna TATA

AI & Visual Computing Engineer

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« Seeking a 6-month end-of-studies internship starting in February - April 2025 »

Profile Summary

With a Master's degree in Intelligent Information Systems and a current academic focus on Computer Vision, I have developed a strong foundation in artificial intelligence, deep learning, and image processing through both academic training and hands-on projects. I am particularly interested in designing and optimizing deep learning architectures for visual understanding tasks, and in developing innovative, AI-driven solutions with real-world impact. I am currently seeking an end-of-studies internship to deepen my expertise and contribute to research or development in these fields.

Skills

Programming Languages

- Expert : Python, JavaScript, TypeScript, Java, PHP
- Proficient : C, C++, C#, Matlab
- Design Patterns **:** Mastery in Object-Oriented Design, SOLID principles, and MVC architectures, RAG/Agentic system

AI/ML Libraries & Frameworks

- Deep Learning : PyTorch, TensorFlow, Keras, FastAI, Hugging Face Transformers
- Computer Vision : OpenCV, Scikit-Image, MediaPipe, Dlib
- Natural Language Processing : spaCy, NLTK, Mistral AI APIs, OpenAI GPT APIs, BERT, LangChain
- Optimization & Probabilistic Models : SciPy, Pyro, PyMC3

Data Science & Visualization

- Data Analysis & Processing: Pandas, NumPy, Dask
- Data Visualization : Matplotlib, Seaborn, Plotly, Altair, Bokeh

Databases

- SQL Databases : MySQL, PostgreSQL, SQLite, Microsoft SQL Server
- NoSQL Databases : MongoDB, Firebase, Redis

3D Modeling & Animation

- **Software :** Blender, Autodesk Maya , Unreal Engine, Unity

Cloud Platforms & MLOps

- Cloud Platforms : AWS (S3, EC2, Lambda), Google Cloud Platform, Microsoft Azure
- MLOps Tools : MLflow, Kubeflow, Docker, Kubernetes, TensorBoard

Languages

- English : B2
- French : Native
- Arabic : Native

Education

Sorbonne Paris Nord University

Master of Intelligent Systems and Visual Computing — *Sep. 2024 - Sep. 2026*

Awarded a scholarship of excellence by L'École Universitaire de Recherche.
Focused on advanced image and video processing, deep learning, and multimedia content coding.

University of Science and Technology Houari Boumediene

Master of Intelligent Computer Systems — *Sep. 2022 - Jul. 2024*

Bachelor of Software Engineering — *Sep. 2019 - Jun. 2022*

Experiences

AI Research Intern – Master's Thesis

LRIA Laboratory, USTHB – Feb. 2025 to Jul. 2025

Explored quantum-inspired metaheuristics to improve clustering in data mining. Focused on combining swarm intelligence and quantum computing principles to optimize performance on large-scale datasets.

Mobile Application Developer Intern

CASH Assurance – March. 2022 to Jun. 2022

Developed a mobile application for managing automobile insurance claims. The system automated tasks for policyholders, administrators, and insurance experts, covering the entire process from claim declaration to compensation.

Computer Science Instructor

Freelance – Jul. 2021 to Jul. 2023

I had the opportunity to share my knowledge and skills in computer science with learners from diverse backgrounds. My teaching responsibilities included two core modules: Algorithms and the Python programming language.

Relevant Projects

Radiology Report Generation from Chest X-Rays

Explored state-of-the-art image-to-text generation models for automatic medical report generation from chest X-ray images. Used the R2Gen model and experimented with newer architectures like Mamba. Evaluated models using metrics on public datasets.

Symptom-Based Disease Classification Using Backward Rule Propagation

Developed a rule-based expert system using backward chaining to infer potential diagnoses from patient symptoms through logical reasoning.

Text-Based Information Retrieval System

Built an IR system capable of indexing and querying a corpus of textual documents using vector space models and Boolean retrieval. with ranking search results based on query relevance.

Spam Classifier Using Machine Learning, Deep Learning, and NLP

Developed a multi-stage pipeline for email spam classification. Applied NLP preprocessing techniques followed by feature extraction.. Evaluated traditional classifiers (SVM, Naive Bayes) and deep learning models (LSTM, CNN) for binary classification, achieving high accuracy on benchmark datasets.

Expert and Recommendation System Based on a Multi-Agent Architecture – Car Rental Web Application

Designed and implemented a hybrid decision-making system using a rule-based expert system integrated with a recommendation engine based on multi-agent communication. Agents were responsible for handling user preferences, vehicle availability, and business constraints. The system was deployed as part of a web application using a modular service-oriented architecture.

N-Queens Problem Solved using metaheuristic approaches

Implemented and benchmarked classical search algorithms (DFS, BFS, A*) and evolutionary/metaheuristic approaches (PSO, GA) to solve the N-Queens combinatorial optimization problem. Comparative analysis was conducted in terms of time complexity, solution quality, and scalability.