

Mehyar MLAWEH

 Portfolio |  Mehyardmlaweh |  MehyarMlaweh |  mlaweh-mehyar |  mehyar.mlaweh@dauphine.eu

SUMMARY

Artificial Intelligence PhD researcher at LAMSADE (Université Paris-Dauphine – PSL), specializing in search-based and generative methods (Monte Carlo Tree Search, deep learning) for molecular and structural design. First author of peer-reviewed research on structure-based RNA design, combined with hands-on industry experience deploying large-scale AI systems on the cloud. Focused on applied research at the intersection of generative modeling, optimization, and scientific discovery.

EDUCATION

2025 - Present	PhD in Artificial Intelligence Université Paris-Dauphine – PSL, LAMSADE, Paris, France Monte Carlo Tree Search and generative methods for 3D molecule design (RNA / proteins). Advisor: Prof. Tristan Cazenave.
2023 - 2025	Master's in Artificial Intelligence and Data Science Université Paris-Dauphine – PSL (Grade: 15.74/20, Valedictorian) Deep Learning, Reinforcement Learning, Monte Carlo Methods, Optimization, NLP, Generative AI, Graphs, Bayesian Networks, Computer Vision, Time Series, NoSQL, Azure.
2020 - 2023	Bachelor's in Management Information Systems IHEC Carthage (Grade: 16.79/20) Java, OOP, SQL, Web Development, OLAP, Power BI, Python, Talend, ClickView, Machine Learning.
2019 - 2020	Baccalaureate in Mathematics , Lycée Pilote de Gafsa (Grade: 16.31/20)

PUBLICATIONS

- Mlaweh, M., Alaya, I., & Cazenave, T. (2026). *BeeRNA: Tertiary Structure-Based RNA Inverse Folding Using Artificial Bee Colony*. Accepted at the **AAAI-26 Workshop on AI for Drug Discovery** (AAAI Conference on Artificial Intelligence).
RNA tertiary structure, inverse folding, swarm intelligence, metaheuristic optimization.

RESEARCH EXPERIENCE

PhD Researcher, LAMSADE, Université Paris-Dauphine – PSL, Paris	Oct 2025 – Present
Designing search-based and generative approaches (Monte Carlo Tree Search, deep generative models) for 3D RNA and protein structure design toward drug discovery. Building and benchmarking structure-prediction and inverse-folding pipelines on GPU/ARM (NVIDIA Grace Blackwell) infrastructure.	
Research Intern, LAMSADE, Université Paris-Dauphine – PSL, Paris	Feb 2025 – Aug 2025
Tertiary structure-based RNA inverse folding: developed and benchmarked sequence-prediction methods evaluated with TM-score and RMSD/eRMSD pipelines (USalign, barnaba). Foundation of the BeeRNA publication.	
Research Intern, Institut de Recherche en Informatique de Toulouse (IRIT)	May 2024 – Jun 2024
Natural language processing with pretrained transformer language models (PLMs) applied to legislative documents.	
Research Intern, GRIFT CRISTAL Laboratory, Tunis	Jan 2023 – Jun 2023
Density estimation, neural network model evaluation, collaborative experimental research.	

PROFESSIONAL EXPERIENCE

AI Engineer, Wealthy Technology, Paris, France	Jun 2024 – Present
Fine-tuning and deployment of large language models; end-to-end AI solutions, RAG systems, and automation on AWS cloud.	
AI Engineer (Freelance), Upwork	Nov 2022 – Present
AI engineering, data analysis, automation tooling, Python scripting, Simulink, Docker.	

SELECTED PROJECTS

Medical Image Captioning	(private)
Vision-language models for medical imaging: caption generation, fine-tuning, vector databases, AWS deployment.	
NER Resume Dataset	GitHub
Named entity recognition: annotated resume dataset (JSON) for automated candidate selection.	
Maze Exploration Strategies	GitHub
Reinforcement learning: Q-learning and exploration–exploitation strategies for maze navigation.	
PluginKernel	PyPI
Published Python package implementing the Plug-In smoothing algorithm for kernel density estimation.	
Twitter Trend Analysis	(private)
Sentiment analysis on 15,400 tweets using Random Forest with visualization of public opinion.	
Breast Cancer Diagnosis	GitHub
Machine learning models for binary classification and predictor analysis.	

AWARDS

- Valedictorian, Master’s in Artificial Intelligence and Data Science, Université Paris-Dauphine – PSL.
- First Place, Hackathon on "Airbnb and the Olympics."
- Second Place, Hack for Care and Culture with AI.

TECHNICAL SKILLS

Programming	Python, C++, Java, SQL, R, MATLAB
ML / DL	PyTorch, PyTorch Geometric, Hugging Face Transformers, scikit-learn, fastai, NumPy, SciPy,
Frameworks	Pandas
Research Methods	Deep Learning, Monte Carlo Tree Search, Reinforcement Learning, Generative Models (diffusion, VAE, autoregressive), Graph Neural Networks, Combinatorial Optimization, Bayesian Inference
LLMs & Generative AI	Transformers, RAG, fine-tuning (LoRA / PEFT), prompt engineering, vector databases
Tools & Infrastructure	Git, Linux, Docker, CUDA / GPU & HPC, conda, Weights & Biases
Cloud & Deployment	AWS, GCP, Azure, Flask, FastAPI, Streamlit, Gradio
Languages	Arabic (native), French (fluent), English (fluent)