

Nazim Bendib

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Final year AI Masters student at Sorbonne University (Parcours DAC), Paris, France. Interned at New York University Abu Dhabi and Instadeep working on Deep Learning projects.

Education

Sorbonne University, M.Sc. Computer Science with Artificial Intelligence Major Sept 2024 – Sept 2025

- **Coursework:** Machine Learning - Computer Vision - Natural Language Processing - Reinforcement Learning - Deep Learning - Explainable Artificial Intelligence - Big data.

Higher National School of Computer Science, M.Sc. Computer Science with Data Science Major Sept 2019 – June 2024

- **Coursework:** Numerical Analysis - Probabilities - Linear Algebra - Optimization - High-Performance Computing - Data Structures - Operating Systems - Operational Research - Machine Learning.

Skills

Python - Torch - Tensorflow - Jax - Distributed Training - Sklearn - OpenCV - C - C++ - SLURM - Optuna - Github - Linux

Experience

Machine Learning Research Intern, New York University Abu Dhabi – Abu Dhabi, United Arab Emirates Sept 2023 – June 2024

- Developed in collaboration with Mathworks an auto-scheduler using Deep Learning that optimizes MLIR code, surpassing Tensorflow with more than 10x speedup in some operations. [paper]
- Employed Multi-action Reinforcement Learning that reduced the action space from $\mathcal{O}(2^n)$ to $\mathcal{O}(n)$ per action.
- Conducted extensive literature reviews and research in automatic code optimization to contribute to state-of-the-art.
- **Tools:** Torch, MLIR, C++, SLURM, NeptuneAI.

Reinforcement Learning Research intern, InstaDeep Ltd – Tunis, Tunisia June 2023 – Oct 2023

- Design and optimize cooperative AI systems using Multi-Agent Reinforcement Learning.
- Utilize JAX to build deep neural networks and optimize RL environments that maximized exploitation of the GPUs.
- Conducted literature reviews and actively engage in AI experimentation to ensure efficient and scalable models.
- **Tools:** Jax, Torch, RLlib, Haiku, Optax, Github, NeptuneAI.

Machine Learning Research intern, CERIST – Algiers, Algeria Aug 2022 – Oct 2022

- Designed face detection and recognition modules using Tensorflow and Tensorflow Lite.
- Used Deep Learning optimization techniques (Quantization, pruning) to optimize neural networks.
- Deployed the products on low-resource edge devices such as Raspberry Pi 4.
- **Tools:** Torch, Tensorflow, Tensorflow Lite, Linux, Cuda.

Publications

CoViews: Adaptive Augmentation Using Cooperative Views for Enhanced Contrastive Learning May 2024

A Reinforcement Learning Environment for Automatic Code Optimization in the MLIR Compiler Aug 2024

Projects

SpaceGAN [github]

GAN-based app generating space images from sketches inspired by NVIDIA gaugan. Ranked Top 1 project at AI festival.

LLM poet (2nd place at Arabichthon22) [github]

Arabichthon2022 is a deep learning competition held by Kingdom Arabia Saudi. I built a website that contains 10 AI-powered tools that generate, classify, and analyze Arabic poetry.

Solving Rubik's with Reinforcement Learning (1st place at UmojaHack 2024) [github]

Rubik's Cube solver using reinforcement learning and beam search techniques, solving 100% of the competition cubes.

Leadership / Volunteering

President of School Of AI Algiers: Managed an AI community as President of the first AI club in Algeria, delivering talks and workshops to more than 200 students.

NVIDIA Deep Learning Instructor: Delivered NVIDIA workshops on fundamentals of Deep Learning and Transformers.