

Angel Lagrange

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About Me

Self-reliant, Inquisitive. Currently pursuing my studies at a computer science engineering school, I have a great deal of interest in topics related to this field, particularly in artificial intelligence in which I want to do my PhD.

Experience

RESEARCHER IN ARTIFICIAL INTELLIGENCE (INTERN), Mila | ÉTS | NICT **May 2025 - Present**

Supervisor : Ulrich Aïvodji

- Designed ML algorithms to generate black-box adversarial attacks on IoT NIDS to evaluate vulnerabilities and guide defenses of these systems.
- Researched and developed solutions to improve the robustness of these ML models, enhancing their resistance to adversarial threats used in attacks like DDoS and Mirai.
- Collaborated with Mila, ÉTS, NICT and Japan's Ministry of Telecommunication.

PROJECT MANAGER, N7 Consulting **January 2024 - Mars 2025**

- R&D project management in machine learning and deep learning CNN.

AI-DRIVEN CYBERSECURITY DEVELOPER (INTERN), Knock - Knock **May 2022 - June 2022**

- Track AI actions for better model optimization and enhance model performance.

SOFTWARE & WEB DEVELOPER, Fedd **July 2021**

- Added new features to the software used by the company for production management.

Research & Projects

Neural Network Efficiency Analysis and Optimization **June 2025 – July 2025**

- Developed a toolkit to analyze and visualize weight importance in neural networks, using custom metrics to guide pruning and quantization strategies. Led to major FLOPs and memory savings with no accuracy loss.

Optimizing Space Trajectories with Deep Q-Learning **January 2025 – May 2025**

- Built a reinforcement learning agent to pilot a spacecraft in a simulated solar system for minimum fuel and time.

Convolutional Autoencoder for Satellite Image Compression **March 2025**

- Trained a convolutional autoencoder on EuroSAT data to reduce image size while preserving quality.

ML Asteroid Impact Prediction **February 2025 – March 2025**

- Used Random Forest to classify Near Earth Objects (NEOs) based on orbital parameters and potential threat.

Active Learning for MNIST Classification **Ongoing**

- Implemented margin sampling strategy that select uncertain images to label to enhance the training process.

Programming Languages : Python (Tensorflow, Keras, DiCE, scikit-learn, PyTorch), Java, C#, C, OCaml

Education

ENGINEERING SCHOOL : ENSEEIHT, Toulouse **2023 - Present**

- Studying computer science, math and machine learning at ENSEEIHT a National Engineering School.

LA PRÉPA DES INP, Bordeaux **2021 - 2023**

- Intensive preparation for engineering schools where I deeply studied math, IT and physics.

HIGH SCHOOL DIPLOMA WITH HONORS **2020**

Languages

French: Fluent | **English**: Professional | **Spanish**: B1