Angel Lagrange

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About Me

Team-oriented, 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

AI RESEARCH INTERN, Mila | ÉTS | NICT **May 2025 - Present**

Supervisor : Ulrich Aïvodji

- Designed ML algorithms to generate black-box adversarial attacks on IoT NIDS using various ML architectures (DNN, DeepNet, XGBoost, AdaBoost, etc...) to evaluate system vulnerabilities and guide defensive strategies.
- Collaborated with Mila, ÉTS, NICT research teams

R&D PROJECT MANAGER, N7 Consulting **January 2024 - Mars 2025**

- Led a small team on an applied R&D project involving machine learning and convolutional neural networks.

R&D AI ENGINEER INTERN, Knock - Knock **May 2022 - June 2022**

- Researched AI-driven strategies and tools to customize intrusion tests by simulating cybercriminal behavior.

SOFTWARE 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 tool to analyze weight importance in neural networks using specifics metrics, aiming to support pruning and model compression strategies.

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

- Implemented a Deep Q-Network (DQN) to explore sequential decision-making in simulated continuous environments, with custom reward shaping.

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

- Trained and evaluated a convolutional autoencoder to compress images while preserving classification-relevant features.

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

- Built a binary classifier using Random Forests to predict threat levels of Near-Earth Objects.

Active Learning for MNIST Classification **September 2024**

- Used uncertainty-based sampling (margin sampling) to iteratively select informative images for annotation, improving sample efficiency in image classification.

Technologies : Python, TensorFlow, Keras, PyTorch, Scikit-learn, OpenCV, OpenMP, Hugging Face, NumPy, Pandas, Matplotlib, SciPy, GitHub, and various machine learning architectures including CNN, MLP, RNN, LSTM, Transformers, ...

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