Alejandro ARGÜELLES

MS in Mathematics and AI at

MVA - Mathematics Vision Learning

ENS Paris Saclay

Research-oriented student seeking internship & PhD opportunities in **Reinforcement Learning**, **Representation Learning**, and **Interpretability**.

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EXPERIENCE

Chief of Deep Learning Estimation — Autonomous (Driverless) Formula Student Car TLS'e Racing 2024 – 2025

- Led the Driverless division to develop estimation pipelines combining Extended Kalman Filters with neural estimators.
- Fused IMU, GPS and LiDAR; integrated with perception and planning for closed-loop autonomy.

Automatic Code Refactoring with AI — Internship Infotel Consulting Mar 2025 - Aug 2025

- Built a private VS Code extension for automated refactoring with LLMs.
- Applied LoRA fine-tuning, RAG, multi-agent orchestration, and diffusion for synthetic data.
- Improved a published *God Class* detector's F1 score $(0.53 \rightarrow 0.58)$.

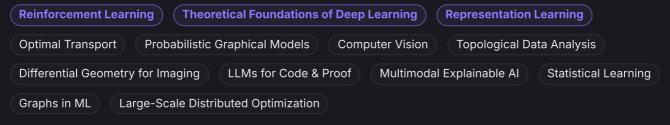
Student Consultant Upsilon Student Tech Consulting 2023

• Designed communication strategies and visuals for clients and partners.

EDUCATION

Master — MVA Mathematics, Vision & Learning ENS Paris-Saclay Sep 2025 - Apr 2026

Advanced coursework in modern machine learning theory and applications. Focus on **Reinforcement Learning**, theoretical underpinnings of deep networks, and geometric/topological methods for data analysis and imaging.



Master — Mathematics & Computer Science for Al Université de Toulouse Sep 2024 - Mar 2025

Rank: 1st of the promotion (1/9)

Statistics Adv	vanced Probabilities	Convex Optimiz	zation Deep Lea	arning	Information Retrieval
Advanced Algorith	hms Language T	heory (Code)	Random Simulation	Signa	I Processing

Degree — Pure Mathematics Université de Toulouse 2020 - 2023

Rank: 1st of the promotion (1/93) — Core foundation across theoretical mathematics: analysis, algebra, topology, geometry, combinatorics, graph theory, measure theory, probability.

SKILLS

- Programming: Python, Coq, OCaml, R, C, C++, JavaScript
- Libraries: PyTorch, TensorFlow, scikit-learn, NumPy, Pandas, Matplotlib, Hugging Face, LangChain, SCIP
- Soft skills: Team leadership, communication, problem-solving, adaptability, consistency

AWARDS & OTHERS

- ANITI Scholarship: Institute of Natural and Artificial Intelligence in Toulouse.
- AVENIR Scholarship (2020): Dialogue Association.
- Olympiad: 4th in the 56th Spanish Mathematical Olympiad (2020, Phase I).
- Languages: English C1, French C1, Italian (beginner).
- Complementary interests: Cybersecurity, Cryptography, Neuroscience.
- Hobbies: Filmmaking, Painting, Photography, Pole Vaulting, Gymnastics, Rubik's Cube (BL).