



# Alix Danvy

Computer Science student  
– ENS Rennes

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## Languages

- French (Native)
- English (Fluent) (TOEIC 955 pts)
- Spanish (Notions)

## Skills

Prog. Languages & Libraries

- Python
- Jax, PyTorch & TensorFlow
- Numpy, Scikit-Learn & Matplotlib
- Git & Gitlab/Github
- Java & Scala
- C & C++
- OpenMP & MPI
- SQL

## Specific Knowledge

- MDP, POMDP, Dec-POMDP, ...
- RL, MORL & MARL
- ML & Deep Learning
- Linear & Constraint Prog.
- OOP & FP
- and other fun stuff, just ask

## Hobbies

- Climbing
- Fencing
- University Choir
- TTRPG (D&D, ...)

## Profil

A CS student from ENS Rennes specializing in Reinforcement Learning (RL) and sequential decision-making under uncertainty. Currently completing my final Master's internship at LIP6 (Sorbonne Université) on hardware-accelerated Multi-Objective RL benchmarking with JAX. My goal is to pursue a PhD focused on RL theory, deep RL, and RL under different settings, with the possibility to apply it to robotics or industry, starting Fall 2026.

## Education

- 2023-2026 École Normale Supérieure de Rennes ENS Rennes  
ENS Diploma in Computer Science (a 3-4 year graduate program focused on research).
- current Master's Degree in Computer Science and Statistics - MINMACS  
Université de Caen Normandie  
A selective, research-oriented Master's program in CS and Statistics
- 2023 Bachelor of Science in Computer Science Université de Caen Normandie  
Graduated Valedictorian (Major de Promotion, 1/121)

## National Conferences

- 2026 Paper at RDPIA, PFIA 2026 (accepted)  
*Garanties d'approximation pour la résolution de POMDP via échantillonnage et réseaux de neurones convexes.* With B. Zanuttini, A. Niveau, J. Dibangoye and E. Escudie.

## Experiences

- current Research Intern, Lip6 – Sorbonne Université, Paris  
*Supervisors: Aurélie Beynier & Farès Chouaki*
- Working on hardware accelerated (GPU/TPU) benchmarking for Multi-Objective Reinforcement Learning (MORL) with JAX and development of new MORL methods.
- July 2025 Research Intern, Bernoulli Institute – Groningen, Netherlands  
*Supervisors: Jilles Dibangoye & Erwan Escudie*
- Investigated novel methods for solving POMDPs using Input Convex Neural Networks with stronger theoretical guarantees.
- March – June 2025 R&D Intern, Ministry of Defense AI Agency (AMIAD) – Bruz, France
- Conducted an R&D project on the application of MORL.
  - Evaluated MORL algorithms for complex scenarios.
- Sept. 2024 – Jan. 2025 Research Intern, GREYC Laboratory – Caen, France  
*Supervisors: Bruno Zanuttini, Alexandre Niveau*
- Developed a novel algorithm for Contingent Planning.
  - Successfully proved key properties of the algorithm's behavior.
  - Conducted experiments to compare with the SOTA.
- May – July 2024 Research Intern, Bernoulli Institute – Groningen, Netherlands  
*Supervisor: Jilles Dibangoye*
- Developed tools to solve Partially Observable Stochastic Games.
  - Designed a problem description format and parser (C++ & ANTLR4).
  - Studied theoretical extensions of Markov Decision Processes.
- Apr. – June 2023 Research Intern, GREYC Laboratory – Caen, France  
*Supervisors: Alexandre Niveau, Bruno Zanuttini*
- Study and development of a new contingent planning algorithm.
- 2022 - 2024 Tutor for CS bachelor students  
Université de Caen Normandie & Université de Rennes, France

## Projects & Tutoring

- current Flow-Matching Transformer for Dexterous Manipulation – Academic Project  
Implemented from scratch a Conditional Flow-Matching Transformer (Torch) for continuous control policies (Imitation Learning). Achieved successful qualitative behaviors on simulated robotic hand manipulation tasks (MuJoCo & Minari). Adapted and based on the paper *Diffusion-Policy*.
- 2023-2024 Anticor association anti-corruption/fraud project – ENS Rennes, France  
Built foundation for a public markets fraud detection tool for jurists (data preprocessing and LLM to classify natural language fields).