Corentin Léger - AI Research Engineer

corentinlger.github.io | corentinlger | +33 7 68 36 91 93 | coleger@ensc.fr

AI Research Engineer with a focus on **Reinforcement Learning**, **Large Language Models**, and **Software Engineering**. Seeking to contribute to cutting-edge **research**, **development**, or **engineering** in innovative projects across the AI field.

Skills

Programming: Python, Git, Bash, Web Development, SQL, Cloud Computing (Slurm), Network (Socket, grpc)

Python frameworks: Numpy, Jax, PyTorch, TensorFlow, sklearn, Optuna, Pandas, Flask, Gym, Sb3, pytest

Experiences

INRIA

Bordeaux, France
(Jan. 2024 - Present)

AI Research Engineer - Flowers team

- Developed the LLM-Culture software to simulate text evolution in **LLM-based multi-agent systems.** The system models agent interactions based on neighbor output, task, and personality across generations. Created tools for text dynamics analysis and built a user-friendly web interface. Co-authored two papers: "Cultural Evolution in Populations of Large Language Models" (preprint) and "When LLMs Play the Telephone Game" (under review).
- Developed a **multi-agent** particle simulator in **Jax** with realistic physics, for AI research and teaching. It enables real-time interaction between Jax-based simulations hosted on a server, and web or Jupyter notebook clients.

  Skills: Multi-agents simulations - Software engineering - Jax - LLMs - Network programming

Bordeaux, France
(Mar. 2023 - Oct. 2023)

AI Research Intern - Flowers & Mnemosyne teams

- Presented "Evolving Reservoir for Meta-Reinforcement Learning" at **EvoStar 2024**, exploring how evolved Reservoirs can improve **Deep RL** agents' adaptability. Implemented a parallelized experiment pipeline, testing agents on partially observable and 3D locomotion tasks, and evaluated their ability to generalize to unknown environments: paper - code.
- Created a tutorial for parallelized hyper parameter search in the **ReservoirPy** machine learning library (400 ☆)

  Skills: Meta-Reinforcement Learning - Evolutionary Algorithms - Reservoir Computing - Parallel Processing

Connectiv-IT

Bordeaux, France
(May. 2022 - Aug. 2022)

Data Science Intern

- Preprocessed helicopter maintenance data using machine learning techniques (cleaning, outlier removal, imputation) for predictive maintenance. Performed statistical analysis, clustering, and data visualization to uncover insights.

  Skills: Data processing and visualization - Pandas - Scikit Learn - SciPy

Projects

Open Source Contributions

- Created a Hugging Face app in **KanRL** to interpret RL policies using Kolmogorov-Arnold Networks (KANs). Led experiments comparing **Policy Gradient** and **PPO** performance with KANs versus classical neural networks.
- Fixed several issues in the **Stable-Baselines3** (8000+ ☆) and **Stable-Baselines3-Contrib** RL Libraries.

Ebiose

- Participated in a two-day Hackathon where we built a tool to optimize **multi-LLM agents systems** on math tasks using **evolutionary algorithms** (blog). The project led to the creation of a start-up by two members of the team.

Symbolic Reinforcement Learning

- Published a paper on Symbolic Reinforcement Learning in HAL Inria. The research explored enhancing RL agents' learning and explainability by integrating **symbolic data** with the **Q-Learning** algorithm.

Education

Master of Science, Computer & Cognitive sciences

ENSC - Bordeaux INP

Bordeaux, France
(Sep. 2020 - Sep. 2023)

- Exchange programs at **Laval University** (Data Science) and at **ENSEIRB-MATMECA** (AI)

Bachelor of Science, Mathematics & Physics

CPBx - Bordeaux University

Bordeaux, France
(Sep. 2018 - Jul. 2020)

- French integrated preparatory class in sport-study program (Volley-Ball), Mathematics and Physics