

Clément DUMAS

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 [linkedin/Clément Dumas](#) | [github.com/Butanium](#) | [Personal page](#)

Education

- 2023-2024: Computer Science research Master [MPRI](#) at **ENS Paris-Saclay**. The ENS is a selective institution that trains teachers and researchers
- 2022-2023: Double Bachelor's degree in Computer Science at **ENS Paris-Saclay**
- 2020-2022: Completed "classes préparatoires", an intensive two-year programme in the sciences with 12 hours of math per week, preparing for the competitive entrance exams to the ENS
- 2017-2020: "Baccalauréat" in the sciences, with honours

Skills

- Proficient with functional (**OCaml**), imperative (**Python**) and object-oriented (**Java**) languages
- Some experience with: **Scala**, **Rust**, **Haskell**, **C**, **C#**, **JavaScript**, **x86_64 Assembly**, **Lisp**
- Proficient in **PyTorch**, **Stable Baselines 3**, **LaTeX**, **SLURM** and **Git**
- Strong mathematical and theoretical computer science background

Research and projects

- Since January 2024: Exploring the emergence of XOR features in Large Language Models and the [RAX hypothesis](#) developed by Sam Marks
- Since October 2023: Supervised Program for Alignment Research (SPAR) under the supervision of Walter Laurito. We are trying to apply Contrast-Consistent Search to Reinforcement Learning models
- Summer 2023: Two months research internship with Jobst Heitzig on Aspiration-Based Q-Learning. See [our LessWrong post](#) and [our Stable Baselines 3 fork](#)
- 2022-2023: Participated in "Séminaire Turing", an AI alignment reading group at ENS Paris-Saclay
- December 2022: Participated in the [AI testing hackathon](#) organized by Esben Kran. [Our submission about Trojans in transformers](#) was ranked #4
- November 2022: Participated in the [ML4G](#), a one-week French AI alignment camp organized by [EffiSciences](#)
- November 2022: Participated in the [Interpretability hackathon](#) organized by Esben Kran featuring Neel Nanda
- October 2022: Participated in the AI alignment Hackathon organized by [EffiSciences](#) about the out of distribution and underspecification problems
- 2021-2022: Implemented a [Monte-Carlo tree search for the travelling salesman problem](#) which expand [this paper](#) to include local search in layouts
- 2021-2022: Created various heuristics for 6 CodinGame multiplayer games in Python and OCaml
- 2021-2022: Independently developed [Clash of bits](#), a game that I plan to publish on [CodinGame](#)
- 2019-2021: Genetic algorithms for the travelling salesman problem with [Scratch](#), Unreal Engine and [Python](#)

Hobbies

- Programming: personal projects and competitions. Favourite topics/paradigms: AI and ML, alignment, MCTS, genetic algorithm, combinatorial optimization, artificial life simulation
- Behavioural biology (thanks to the online course [Human Behavioural Biology](#), by Robert Sapolsky)
- Improv theater, escape games, board games, table-top and live action role-playing games
- Reading (particularly heroic fantasy and science fiction)
- Sport - badminton and tennis competitions, volleyball, football, team sports in general

Referees

Jobst Heitzig

Leader, FutureLab on Game Theory and Networks of Interacting Agents
Potsdam Institute for Climate Impact Research
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Matthias Fuegger

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Walter Laurito

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