

# CLÉMENT ROMAC

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Age : 27 ◊ <https://clementromac.github.io/>

## RESEARCH INTEREST

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I am interested in autonomous and open-ended Deep Reinforcement Learning.

## EDUCATION

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**University of Bordeaux, Bordeaux** *2022 - Current*

Ph.D. in Computer Science

Pierre-Yves Oudeyer (Inria, FLOWERS) & Thomas Wolf (Hugging Face)

**University of Bordeaux, Bordeaux** *2019 - 2020*

MSc. in Computer Science

Algorithms and Models specialisation

**Ynov Informatique Ingésup, Bordeaux** *2014 - 2019*

Degree in Computer Science engineering

Data Science specialisation

Rank : 1

**High School Les Iris, Lormont** *2011 - 2014*

High School Degree, with the highest honours

Overall Notation : 17.75/20

## WORK EXPERIENCE

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**Hugging Face & Inria (FLOWERS team), Bordeaux & Paris** *January 2022 - Current*

*PhD student*

- Studying how autonomous Deep RL agents can leverage large Language Models

**Inria (FLOWERS team), Bordeaux** *September 2020 - December 2021*

*Research Engineer*

- Working on an experimental platform to apply curiosity-driven algorithms to automatic discovery of Complex Systems (e.g. self-organizing)
- Work environment :
  - Angular 1.6
  - PostgreSQL, MongoDB
  - Python : Flask, PyTorch
  - Docker

**Inria (FLOWERS team), Bordeaux** *March 2020 - August 2020*

*Research intern*

- Worked on TeachMyAgent, a benchmark platform for Automatic Curriculum Learning applied to Deep Reinforcement Learning algorithms :
  - Created procedurally generated Box2D environments and embodiments
  - Implemented state-of-the-art Automatic Curriculum Learning methods
  - Built a benchmark setup and benchmarked the methods
  - *Paper accepted at ICML 21'*
- Work environment :

— Python : Tensorflow

### **Weenove, Bordeaux**

*October 2017 - February 2020*

*Part time Data Scientist*

- In charge of the Machine Learning R&D :
  - Implemented an Automated Machine Learning service
  - Made this service available (Beta) in a Business Intelligence Software (Biwee)
  - Lead the Machine Learning R&D projects
  - Data Science projects
- Work environment :
  - Azure ML Services
  - Docker
  - Python : Pandas, Scikit-Learn, Keras, Jupyter
  - C#

### **Scalian, Bordeaux**

*Summer 2017*

*Intern Data Scientist*

- Data Science projects :
  - Time Series Anomaly Detection
  - Barcode localization on drone pictures with Deep Learning
  - Data Exploration project
- Work environment :
  - Python : Pandas, Scikit-Learn, Flask, Tensorflow, Jupyter
  - C++ : Qt Creator

### **Weenove, Bordeaux**

*June 2016 - May 2017*

*Part time Intern Data Scientist*

- Machine Learning R&D :
  - Implemented an Automated Machine Learning service
  - Made this service available (Beta) in a Business Intelligence Software (Biwee)

### **Weenove, Bordeaux**

*Summer 2015*

*Intern Developer*

- C# development of a Business Intelligence Software (Biwee)
- Microsoft environment : Azure, Visual Studio, WCF, TFS
- Analysis of Open Data

## **PROJECTS**

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### **ChatGPT expliqué en 5 minutes (2023)**

A series of short videos explaining Large Language Models. The project can be found **here**.

### **Lamorel (2022)**

Lamorel is a Python library designed for RL practitioners eager to use Large Language Models (LLMs)(**repository**)

### **Automated Discovery Tool (2021)**

A software for assisted and automated discovery of patterns in the exploration of complex systems (**repository**).

### **Interactive Deep RL Demo (2021)**

In-browser interactive demo of Deep Reinforcement Learning agents' adaptation to unknown 2D tasks. The project can be found **here**.

## PUBLICATIONS

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### **Grounding Large Language Models in Interactive Environments with Online Reinforcement Learning**

Thomas Carta, Clément Romac, Thomas Wolf, Sylvain Lamprier, Olivier Sigaud, Pierre-Yves Oudeyer. *Fortieth International Conference on Machine Learning, ICML 2023*.

### **TeachMyAgent : a Benchmark for Automatic Curriculum Learning in Deep RL**

Clément Romac and Rémy Portelas and Katja Hofmann and Pierre-Yves Oudeyer. *Thirty-eighth International Conference on Machine Learning, ICML 2021*.

### **Meta Automatic Curriculum Learning**

Rémy Portelas and Clément Romac and Katja Hofmann and Pierre-Yves Oudeyer. 2020 (Preprint). abs/2011.08463.

### **Partially Observable Markov Decision Process with Minecraft**

Romac et Béraud. 2019 (Preprint). abs/1903.04311.

## SKILLS

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<b>Data Science</b>	Machine Learning, Deep Learning, Reinforcement Learning
<b>Development</b>	Python (Pytorch, Tensorflow, Scikit-Learn), C#, C++, JavaScript
<b>Others</b>	DataBases (SQL, NoSQL), Linux, Docker

## LANGUAGES

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<b>French</b>	Native speaker
<b>English</b>	Advanced (TOEIC : 980/990)

## TEACHING

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**Ecole Nationale Supérieure de Cognitique Bordeaux** *October 2023*

*Transformers and LLMs - ENSC 3A IA*

*Last year engineering students from AI Specialisation*

Taught 7 hours on Attention, Transformers and Large Language Models to last year students in engineering from the AI specialisation at ENSC Bordeaux (France).

**Ynov Informatique Ingésup Bordeaux** *November 2018 - December 2018*

*Machine Learning Major*

*CS MSc, Data Science Specialisation*

Jointly taught 90 hours to fourth and fifth year (MSc) CS students. This course was part of the Data Science specialisation at Ynov campus Bordeaux (France).

## SERVICE AND LEADERSHIP

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Co-founded and directed (until 2019) the AI working group of Ynov Informatique Ingésup Bordeaux

— We gather every two weeks on Wednesday to share and work on AI projects.

— Projects area : Reinforcement Learning, Chatbots, Kaggle

Co-founded and animated (until 2019) the meetup “Les nuits des réseaux de neurones”

— Talk and workshops on Neural Networks all night long.

— Held every month or two months, open to everyone (270 members).

— <https://www.meetup.com/fr-FR/Les-nuits-des-reseaux-de-neurones/>

Co-organizer of the meetup “Bordeaux Machine Learning Meetup”

- Talk and workshops once a month (+1400 members)
- <https://www.meetup.com/fr-FR/Bordeaux-Machine-Learning-Meetup/>

## **HOBBIES**

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Sport : I have been playing football since I am 6 years old. I love sport more generally.

Music : I play bass guitar in a band.