

Cyrille Kone

PhD student in statistics and computer science

Topics

Bandits Theory, Online Learning, Sequential Learning, Reinforcement Learning

Education

PhD student, Inria Lille (Scool team, ex-Sequel), University of Lille
Nov 2022 - ongoing 📍 Lille, France

PhD student in the Inria Scool team (Sequential Continual Online Learning). I study bandit theory for multi-attribute pure-exploration problems with applications to clinical trials, recommender systems etc.

Supervisors: Emilie Kaufmann (Inria Lille), Laura Richert (Inserm Bordeaux)

Master MVA, Mathématiques Vision Apprentissage - *Mathematics Vision Learning*
École Normale Supérieure de Paris-Saclay, University of Paris-Saclay, Computer Science and Mathematics

Sep 2021 - Aug 2022 📍 Paris, France

Object Recognition and Computer Vision, 3D Computer Vision, Reinforcement Learning, Computational Optimal Transport, Advanced Learning for text and graph data, Deep Learning

Ecole Polytechnique Fédérale de Lausanne, EPFL, master's degree, Computer Science and Applied Mathematics. *Exchange student*

Dec 2020 - Aug 2021 📍 Lausanne, Switzerland

Natural Language Processing, Computer Vision, Pattern Recognition, Reinforcement Learning, Convex Optimization, Machine Learning Theory

Ecole Normale Supérieure de Rennes, Institute of advanced scientific studies, master's degree, Computer Science, Applied Mathematics and Robotics

Sep 2019– Aug 2021 📍 Rennes, France

Robotics, Diffusion Phenomenon, Electrical Engineering, Mechanical Engineering, Modeling, Applied Physics, Informatics

Professional Experience

Teaching Assistant, Ecole Polytechnique Paris

Jan 2023 – Mar 2023 📍 Paris, France

Teaching Assistant of the Reinforcement Learning (RL) class of Prof Maillard at Ecole Polytechnique. I cumulated more than 10 hours giving lectures. I have evaluated and supervised students' projects in RL

Research Intern, Inria Lille, Scool team

May 2022-Sep 2022 📍 Lille, France

Under the supervision of Prof. Emilie Kaufmann, I have studied pure exploration problems in bandits for multi-variate distribution. The goal was to design an optimal algorithm for Pareto set identification in bandit setting. This work led to a publication at AISTATS 2023. Applications include: clinical trials with multiple endpoints, recommender systems with multiple metrics of interest.

Research Engineer Intern, Machine Learning and Optimization Lab (MLO @ EPFL)

Feb 2021- Aug 2021 📍 Lausanne, Switzerland

Under the supervision of Prof. Martin Jaggi, I have trained a BART-distilled model for summarizing EPFL's scientific news. I have been implementing 1) a new way of topic conditioning to produce summaries of a given text, but tailored to a particular chosen topic aspect, and 2) Allowing the transformer model to produce text summaries of different text readability levels, i.e., easy language vs technical language. [Website of the project](#)

Details

Address

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E-mail

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Links

[Google Scholar](#)

[Kaggle account](#)

[Github portfolio](#)

[Medium articles](#)

Skills

TensorFlow & Keras

PyTorch

Python (NumPy, pandas, HuggingFace, NLTK, matplotlib, SciPy, plotly, skimage, OpenCV, Django etc.)

NoSQL (MongoDB & Redis)

C/C++, R, Excel/VBA, Java

Probability Theory (Markov chains, Learning theory, etc.)

Algebra (Linear Algebra, Tensor Theory etc.)

JavaScript & TypeScript (intermediate)

Python (advanced)

C++ (intermediate+)

Matlab (beginner)

React JS (intermediate)

Git

AWS & Azure Cloud

Languages

French

● ● ● ● ●

English

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Hobbies

Boxing

Coding

Running

Research Engineer Intern, IRISA Computer Science Research Lab
May 2020-Jul 2020 📍 Rennes, France

I have developed a Java multiplatform application for gesture recording on tablet and smartphones. The tool is used for studying musculoskeletal disorders.

Publications

Bandit Pareto Set Identification: the Fixed Budget Setting, **AISTATS 2023**
Cyrille Kone, Emilie Kaufmann, Laura Richert

Adaptive algorithms for relaxed pareto set identification, **NeurIPS 2023**
Cyrille Kone, Emilie Kaufmann, Laura Richert

Constrained Pareto Set Identification with Bandit Feedback, *Under review*
Cyrille Kone, Emilie Kaufmann, Laura Richert

Bandit Pareto Set Identification with a Multi-output linear model, *Under review*
Cyrille Kone, Emilie Kaufmann, Laura Richert

A study of fish undulatory swimming based on merged CFD and experimental video of mosquito fish, *IEEE OCEANS 2021 Conference*
Jianshun Guan, *Cyrille Kone et al.*

Projects

Mixing Adam and SGD to improve learning

March 2021- Jun 2021 📍 Lausanne, Switzerland

Together with two other colleagues, we have been testing some strategies for mixing Adam and SGD to improve the training of a DNN model with CIFAR10. The idea is to take advantage of Adam acceleration while preserving the generalization capability of SGD.

Cards game detection and classification model

Feb 2021- Jun 2021 📍 Lausanne, Switzerland

Coupling traditional Computer Vision techniques (Hough transform, template matching, thresholding etc.) with a Deep Learning model, we (together with one colleague) have implemented a cards game detection and classification model. Achieving a 98% accuracy on test set.