

Paul Liautaud

Statistical & Machine Learning

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🌐 Paul Liautaud
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Education

- 2022 **M.Sc. 2 Applied Mathematics, Statistical/Machine Learning & Algorithms (M2A)**,
Key courses: Statistical & Machine Learning, Online Convex Optim., Stochastic Optim., Compressed Sensing, Concentration inequalities; Reinforcement Learning, Deep Learning, Computer Vision.
Sorbonne University, Paris 5th
- 2021 **M.Sc. 1 Applied Mathematics**,
Key courses: Statistics, Advanced probabilities, Stochastic calculus & control, Numerical probability & computational statistics, Functional analysis, C++.
Sorbonne University, Paris 5th
- 2020 **B. Sc. Mathematics**.
Aix-Marseille University & Sorbonne University, Aix-en-Pce & Paris
- 2018 **Intensive one-year study course - Mathematics & Physics (MPSI)**.
Paul Cézanne High School, Aix-en-Pce

Experience

- April –Sept 2022 **Master Thesis, LPSM - Sorbonne University, Paris.**
Topic: *Online Boosting*. Supervision: Pierre Gaillard (Researcher, INRIA) & Olivier Wintenberger (Professor, Sorbonne University)
- March –July 2022 **Preparatory school examiner (MPSI), Stanislas High School, Paris.**
Oral Examination – 2 hours per week
- May –Aug 2021 **Research internship, LPSM - Sorbonne University, Paris.**
Topic: *Phase transition for the compressed sensing problem with Gaussian matrices and possibly with more structured random matrices*. Supervision : Claire Boyer & Pierre Tarrago (Lecturers, Sorbonne University)
- June 2019 **Exam supervision (Baccalaureate 2019), P.G. de Gennes High School, Digne-les-Bains.**

Projects

- 2022 **Gradient Boosting [Code + Report]**, Prof. Arnaud Guyader, Antoine Godichon-Baggioni.
Implemented and studied Tree Gradient Boosting, in Python
- 2022 **Online Convex Optimization [Code + Report]**, Prof. Olivier Wintenberger.
Implemented and studied several online optimization algorithms, in Python
- 2022 **Training GANs with Transformers [Code + Poster]**, Prof. Patrick Gallinari.
Implemented the paper *ViTGAN : Training GANs with Vision Transformers* by Kwonjoon Lee, et . al. in Pytorch
- 2022 **Kernel Random Forest to approximate Random Forest [Code + Report]**, Prof. Gérard Biau.
Studied the paper *Random Forests and Kernel Methods* by Erwan Scornet, with numerical experiences in Python
- 2021 **Brownian Motion [Link]**.
Created an RShiny app on the construction and applications of the Brownian Motion.

Skills

- Languages Python , C++, R
- Frameworks PyTorch, Tensorflow, Scikit-Learn
- Utilities Anaconda, Git, Jupyter Notebook, Google Colab, RStudio, RShiny, LaTeX
- Communication French, English, Spanish

Relevant Courses

Classroom Statistics, Probability, Statistical & Machine Learning, Online Convex Optimisation, Stochastic control & optimisation, Reinforcement Learning, Concentration inequalities