EUGÈNE BERTA

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EDUCATION

ENS Paris-Saclay - Mathematics, Vision, Learning (M2 MVA) *2022 - 2023*

· Computational Statistics, working on [1] as a course project.
· Optimal Transport, working on [2] as a course project.
· Geometric Data Analysis, working on [3] as a course project.
· Convex Optimization
· Reinforcement Learning
· Kernel Methods for Machine Learning
· Bayesian Machine Learning
· Models, Information and Statistical Physics

Télécom Paris - Engineering Degree *2019 - 2022*

· First year : Applied Mathematics, Physics, Computer Science.
· Second year : Data Science track at EURECOM. Statistics, Machine Learning, Optimization.

Stanislas Paris - Classes Préparatoires PCSI-PSI *2017 - 2019*

· Mathematics, Physics, Engineering.

WORK EXPERIENCE

Research Intern, SIERRA, INRIA Paris *April 2023 - September 2023*

6 months research internship in the SIERRA project team, under the supervision of Francis Bach and Michael Jordan. Working on calibration of classifiers with isotonic regression. This internship led to a submission to the international conference on artificial intelligence and statistics (AISTATS 2024).

Freelance Data Scientist *July 2022 - April 2023*

In parallel to my studies, I am providing statistical analysis and inference solutions for a young french startup. I am building algorithms for user recommendations and automatic trend detection using mainly my knowledge in statistics and machine learning.

Machine Learning Intern at Toyota Logistics *February 2022 - July 2022*
Netherlands / Spain

I developed and deployed in production computer vision models for an industrial application. I was responsible for the development of intelligent cameras fixed on the ceiling of warehouses to send orders to autonomous vehicles in the warehouse.

Machine Learning Research Intern at Aqemia *July 2021 - January 2022*

Aqemia is a french startup (spin-off from CNRS and ENS Paris) specialized in drug discovery. Aqemia invents innovative molecules and maximizes their chance at success in pharmaceutical research.
I carried out a research project to improve the drug discovery pipeline of the company. I implemented an attention architecture for 3D point cloud inspired from [4], and trained it using contrastive learning on the Protein Data Bank to learn useful descriptors for protein pockets (following an idea from [5]).
A high level presentation of my contribution was published in a blog post co-authored with my internship supervisor, Jacques Boitreaud.

PROJECTS

3D Computer Vision - Freelance Project - SmartPixels *Fall 2022*

I worked on the very active field of Neural Radiance Fields [6]. At the request of the french Startup SmartPixels, I worked on combining the results obtained in the papers [7] and [8] to render in the web 3D models learned in a few minutes with a neural radiance field model.

Pose Estimation - Machine Learning Course - EURECOM *Fall 2020*
Supervised by M. Zuluaga

I worked on 3D pose estimation of sneakers in photographs. I proposed an original method to apply gradient descent to solve the problem.

NLP - End of year project - Télécom Paris *Spring 2020*
Supervised by J-L. Dessalles

I worked on natural language interactions with a database, alongside a researcher in artificial intelligence at Télécom Paris.

Recommendation Algorithm - Year long project - Télécom Paris *Fall 2019 - Spring 2020*
Supervised by J-L. Dessalles

I developed a recommendation algorithm with innovative handcrafted mathematical distances based on mutual information.