Ambroise **Renaud**

Data Scientist

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Born 04 august 1997 (22 years old) at Nice, France

Currently in my last year of my engineering studies at École Nationale Supérieure d'Ingénieurs Sud Alsace (ENSISA), I am specialized in Computer Science. In addition to that, I did several internships in the fields of Machine Learning and Data Science, topics I deepened during my academic exchange at the Swiss Federal Institute of Technology in Lausanne (EPFL). I have a great interest in research, especially artificial intelligence applied to the maritime field and I am actively looking for a PhD thesis in this field.

Education

2019 - 2020 — **EPFL (École polytechnique fédérale de Lausanne)**
Exchange Year | Machine Learning, Data Science, Learning Analytics, Mathematics of Data, Optimization for machine learning, Systems for data science, Deep learning, Advanced algorithms. **Overall score : 5.25/6**

2017 - 2020 — **Ecole Nationale Supérieure d'Ingénieurs Sud Alsace ENSISA**
Engineer's degree in Computer Science & Networks

2015 - 2017 — **Institut Stanislas Cannes**
CPGE PCSI-PSI, Physics, Mathematics, Automation. (Two-year highly selective classes to prepare for the competitive exams to the Grandes Écoles.)

2012 - 2015 — **Lycée Mont Saint Jean**
Baccalauréat S, Mathematics, Life Sciences

Experience

January 2021 – July 2020 — **Data Science Intern, Naval Group - CEMIS (centre of excellence for information and signature management), France**
Internship at Naval Group Ollioules CEMIS : Optimization of Artificial Intelligence Algorithms for systems integrity, applied to Naval Defense.

- Linear Algebra
- Probabilities
- Machine Learning
- Evolution strategy (ES), genetic algorithms (GA) and differential evolution (DE)

Python | Pytorch | Elasticsearch

September 2019 – June 2019 — **Research Intern | Data Knowledge and Operational Effectiveness, NATO STO-CMRE - Centre for Maritime Research and Experimentation, Italy**
Internship at The North Atlantic Treaty Organization (NATO) :

- Machine learning classifiers applied to Automatic Identification System (AIS) data. (Random Forest, Decision Tree, Perceptron, KNN, Logistic Regression, SVM)
- Feature selection
- Hyperparameter optimization
- Data analysis
- Data Mining

Machine Learning | Data Science | Data Mining | Python | LaTeX

September 2018 – June 2018 — **Computer Science Intern, CRC MINES ParisTech - Risk and crisis research centre, France**
Internship at the Risk and crisis research centre (CRC) :

- Data collection (deployment of an Automatic Identification System (AIS) station, Web scraping)
- Data analysis
- Data warehousing (PostgreSQL)
- Java development

Java | NodeJS | PHP

Languages

French Native
English TOEIC 960/990

Strengths

- Independence
- Decision making
- Time management

Skills

Python	Hands-on experience : internships, labs and semester projects focusing on implementing Machine Learning and Deep Learning models using Pytorch, sklearn, NumPy, Pandas or PySpark for cluster-computing.
Mathematics	Convex formulation for data analytics problems, optimization and statistical analysis.
Software engineering	Theoretical courses as part of Engineer's Degree in Computer Science and Networks. Familiarity with modern software engineering best practices (version control, unit testing, design patterns and code writing convention).
Others	Java, C++, SQL

Projects

Self-supervised learning for MRI sampling — 2020

Master semester project at EPFL Laboratory for Information and Inference Systems – LIONS.
Create a clean PyTorchre-implementation of a cutting-edge reinforcement learning based sampling algorithm. Deliverable were a well documented codebase including tests as well as a clear and legible report.

Python | Pytorch | Reinforcement Learning

A deep learning approach to predict children inductive reasoning strategies — 2019

Master semester project at EPFL Computer-Human Interaction for Learning & Instruction laboratory - CHILI
This project focused on predicting children's next answers given their previous ones in a quiz environment. This projects covered models and methods to prepare temporal data and implement recurrent neural network for training and inference.

Python | Keras | Pytorch

Global gene expression analysis : determine hormone signalling activation in humanbreast cancer samples — 2019

https ://github.com/ambroisernd/epfl-breast-cancer-ml-project
Machine Learning project at EPFL Swiss Institute for Experimental Cancer Research - Brisken laboratory. The goal was to use data collected by the laboratory to cluster patients according to their cells receptivity to hormones given their gene expression.
Best Machine Learning project award.

Python | Sklearn | NumPy | Pandas

Exploring French National Trafic injuries data — 2019

https ://epfl-ada-project.github.io/
Applied Data Analysis project at EPFL. The goal was to explore a dataset provided by the French road safety observatory (ONISR), composed of more than 474,000 accidents from 2005 to 2018. Deliverable were : Python code & notebooks, a website, a poster.

Python | Pandas | NumPy | Scipy.stats | Seaborn

Learning to discover : The Higgs Boson Machine Learning Challenge — 2019

Project 1 of Machine Learning course at EPFL
Solve the Higgs Boson Machine Learning Challenge without using any deep learning or machine learning library.

Python | NumPy

Generating music with artificial intelligence (neural approach) — 2019

https ://github.com/ambroisernd/projet2AMusic
Semester project at ENSISA. Given a patern of n notes, a neural network automatically generate the end of the song.
Best grade (18/20)

Python | Keras

References

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