

# Ambroise RENAUD

## Data Scientist

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📍 45 chemin valentin, résidence la charriere B2, 06600 Antibes, France  
📅 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 Data Scientist Intern, NAVAL GROUP - CEMIS (CENTRE OF EXCELLENCE FOR INFORMATION AND SIGNATURE MANAGEMENT), France**
- July 2020 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 Research Intern | Data Knowledge and Operational Effectiveness, NATO STO-CMRE - CENTRE FOR MARITIME RESEARCH AND EXPERIMENTATION, Italy**
- June 2019 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 Data Engineering Intern, CRC MINES PARISTECH - RISK AND CRISIS RESEARCH CENTRE, France**
- June 2018 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

<b>Python</b>	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.
<b>Mathematics</b>	Convex formulation for data analytics problems, optimization and statistical analysis.
<b>Software engineering</b>	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).
<b>Others</b>	Java, C++, SQL

## PROJECTS

### SELF-SUPERVISED LEARNING FOR MRI SAMPLING

FEB 2020 – JUL 2020

Master semester project at EPFL Laboratory for Information and Inference Systems – LIONS.

Create a clean PyTorch re-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

SEP 2019 – FEB 2020

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

### DETERMINE HORMONE SIGNALLING ACTIVATION IN HUMAN BREAST CANCER SAMPLES

OCT 2019 – DEC 2019

<https://github.com/ambroisernd/epfl-breast-cancer-ml-project>

Machine Learning project at EPFL Swiss Institute for Experimental Cancer Research - Briskin 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

OCT 2019 – JAN 2020

<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

OCT 2019 – NOV 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)

APR 2019 – JUN 2019

<https://github.com/ambroisernd/projet2AMusic>

Semester project at ENSISA. Given a pattern of n notes, a neural network automatically generate the end of the song.

**Best grade (18/20)**

Python Keras

## REFERENCES

**Dr. Aldo Napoli**  
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CRC - MINES PARISTECH  
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