Ambroise **Renaud**

Data Scientist

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Toulon (83200), France
Born : 04/08/1997 at Nice, France

Specialized in Computer Science, I have a great interest in research, especially artificial intelligence applied to time series data. I love working on real world project involving state of the art technologies and using my knowledge to solve data analytic problems. I am actively looking for data scientist position in the manufacturing industry and R&D to solve business challenges.

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

- Decreased the computational cost of selecting and optimizing a deep learning model by 10 times, using an automated machine learning pipeline
- Proposed methods to optimize deep learning models using genetic algorithms
- Implemented a modified random search algorithm to perform model selection more efficiently
- Wrote a 65 pages report and presented my work to the team

Python | Pytorch | Elasticsearch | Genetic algorithms | Neural Networks | AutoML

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

- Applied machine learning classifiers to Automatic Identification System (AIS) data. (Random Forest, Decision Tree, Perceptron, KNN, Logistic Regression, SVM)
- Implemented the different steps of the machine learning classification pipeline in Python
- Selected meaningful features for training and analysis
- Highlighted the importance of human factor and false labels in machine learning training
- Wrote a 30 pages report detailing the implementation and methods used

Python | Machine Learning | sklearn | Feature Selection | LaTeX

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

- Achieved top 5 ranking on *AISHub* by building and configuring an AIS station
- Parsed and stored AIS raw data using PostgreSQL and Java
- Properly indexed data to increase query speed

Java | NodeJS | PHP | PostgreSQL

Languages

French Native
English TOEIC 960/990

Strengths

- Autonomy
- 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
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 - 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. Our team won the **Best Machine Learning project award** (class competition, approx. 100 teams).

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 patern of N notes, a neural network automatically generate the end of the song. Our team got the best grade among all other students.

Python | Keras

References

Dr. Vincent Martin
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