Ambroise Renaud

Engineer specialised in Data Science and AI

Mandelieu-la-Napoule, France

+33 6 46 42 12 11

ambroise.renaud@gmail.com

https://ambroise-renaud.fr

Skills

Programming

Python, C, C++, Java

Data Science & Machine Learning

PyTorch, Keras, Scikit-learn, Pandas, Numpy, XArray, Seaborn, QGIS, Grafana, Tensorflow

Data Engineering

PostgreSQL, TimescaleDB, Apache Kafka, Apache NiFi, Apache Spark, PySpark, Elasticsearch, Logstash, Kibana, Distributed computing (private cloud), Google Cloud Platform (GCP), BigQuery (GCP), Cloud Run (GCP), Cloud Storage (GCP), Amazon Web Services (AWS), Prometheus

Software Engineering

Git, Unittest, Jenkins, Docker, Kubernetes, Jira, Kanban, Scrum

Languages

English
TOEIC: 960/990

French
Native

Interests

Sports & hobbies

Ultra trail running, Cycling, Aviation Photography (plane spotting)

To obtain a full-time position as a Data Scientist, Data Engineer, or a data-related role, applying my skills in data analysis, machine learning, and software engineering to solve real-world challenges.

Education

Mines Paris – PSL **2021 - TBD (2025)**
Paris, France Ph.D. in Data Science

Ph.D. thesis of the PSL University prepared at Mines Paris CRC laboratory.

ENSISA **2017 - 2021**
Mulhouse, France Diplome d'ingénieur en informatique et réseaux (M.Sc.)

Software engineering and computer science. Data science specialisation.

EPFL **2019-2020**
Lausanne, Switzerland Academic Exchange in Data Science

Machine learning, applied mathematics, optimisation and data analysis.

Institut Stanislas **2015 - 2017**
Cannes, France CPGE PCSI-PSI

Experience

Mines Paris – PSL **Dec 2021 – Dec 2024**
PhD Candidate in Data Science Sophia-Antipolis, France

Modelling and classification of ship radio-frequency emissions using AI.

- Conducted research on VHF propagation and AI-based radio-wave modelling.
- Designed and deployed a data acquisition, transformation, and storage pipeline in the context of big data, handling large volumes of real-time streaming data.
- Modelled VHF emission propagation using AI techniques.
- Developed, implemented, and evaluated the proposed AI-based approach.

Naval Group **Mar 2021 – Nov 2021**
Data Scientist Ollioules, France

H2020 EFFECTOR project for maritime situational awareness at strategic and tactical operations.

- Implemented a data ingestion, storage, and transformation pipeline.
- Applied semantic web technologies and ontologies for maritime awareness.

Naval Group **July 2020 – Jan 2021**
Data Scientist (Internship) Ollioules, France

Optimization of AI algorithms for the integrity of naval defence systems.

- Reduced model selection cost by 10x using automated machine learning.
- Developed optimization methods with genetic algorithms and random search.

NATO - North Atlantic Treaty Organization **June 2019 – Sept 2019**
Data Scientist (Internship) La Spezia, Italy

Machine learning for detecting suspicious behaviour of ships at sea.

- Designed a machine learning pipeline to classify ships behaviours at sea.
- Highlighted key features and showcased results within the operational context.

Mines Paris - PSL **June 2018 – Sept 2018**
Data Engineer (Internship) Sophia-Antipolis, France

Deployment of a data acquisition station and a maritime data storage system.

- Built a data ingestion pipeline to parse and store real-time streamed data.
- Optimized query speed and storage size.

Laboratory and semester projects

Self supervised learning for MRI sampling **Febr 2020 - July 2020**
EPFL Master research project

18 hours a week project at EPFL Laboratory for Information and Inference Systems – LIONS, supervised by Prof. Volkan Cevher.

- Created a clean PyTorch re-implementation of a cutting-edge reinforcement learning based sampling algorithm, wich entailed reading and understanding the original paper as well as a quite complicated TensorFlow code base.
- Tracked down differences between the implementation and the algorithm described in the paper and used the understanding of the underlying MCTS algorithm to decide which versions to chose.
- Delivred a readable, well documented codebase including tests as well as a clear and legible report.

A deep learning approach to predict children inductive reasoning strategies **Sept 2019 - Febr 2020**
EPFL Master research project

18 hours a week project at EPFL Chili Computer-human Interaction in Learning and Instruction - CHILI laboratory, supervised by Pierre Dillenbourg.

- Focused on predicting children's next anwer given their previous ones in a quiz environment.
- Compared and implemented different time series based methods.
- Implemetend a pipeline for training and inference.
- Wrote a report and delivred a documented code base.

Determine hormone signalling activation in human breast cancer samples **Oct 2019 - Dec 2019**
EPFL Machine Learning course project

Machine Learning project at EPFL Swiss Institute for Experimental Cancer Research - Brisken laboratory.

- Transformed data collected by the laboratory to cluster patients according to their cells receptivity to gormones given their gene expression.
- Won the class "Best Machine Learning project award" and got invited to AMLD 2020 conference.

Exploring french national trafic injuries data **Oct 2019 - Jan 2020**
EPFL ADA course project
https://epfl-ada-project.github.io/

Applied Data Analysis course project, focusing on data visualisation and project management.

- Explored a dataset provided by the french road safety observatory (ONISR), composed of more than 474k accidents from 2005 to 2018.
- Wrote python code and notebooks to extract meaningful insights.
- Built a website and a poster to showcase results.

Generating music with AI **Apr 2019 - Jun 2019**
ENSISA semester project

Semester project at ENSISA supervised by Dr. Laurent Thiry .

- Developed and implemeted a method to generate a full piano song given a small input sequence of notes (MIDI file).