



# Hugo Le Moine

DATA SCIENCE · PYTHON PROGRAMMING

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*Soon to graduate data scientist apprentice with 2+ years of experience and a proven ability to use machine learning in an innovative way. Looking to secure a data scientist position starting September 2021*

## Work Experience

### Airbus Commercial Aircraft — Acoustics Department

DATA SCIENTIST APPRENTICE

*Toulouse, France*

*Sep. 2018 — (Aug. 2021)*

- Designed a pipeline to automatize cleaning of audio recordings using **anomaly detection** algorithms. Slashed cost by >99% and reduced required time by >90%.
- Identified contributors to specific aircraft noise variability using **data analysis** and **visualizations**.
- Determined sources of production quality drifts by performing **time series** analysis.
- Experimented autoencoder-based **predictive maintenance** to anticipate component failure based on vibrations.
- Performed **multi-objective optimization** using an **artificial neural network** based **surrogate model** and improved performance at constant noise.

## Projects

### University of Waterloo — Ubiquitous Health Technology Lab

RESEARCH PROJECT IN COOPERATION WITH UTC

*Waterloo, Canada*

*Sep. 2020 — (Jan. 2021)*

- Analysed and cleaned motion data from **100 000+ smart thermostats** (>600GB of data).
- Trained models to predict the number of occupants in homes with **>70% accuracy**.

### SNCF — French National Railway Company

EXPERIMENTAL TEAM PROJECT, SUPERVISED BY SNCF RESEARCHERS

*Paris, France*

*Feb. 2020 — June 2020*

- Optimized the economic performance of a high-speed train by searching the most efficient design of operation.
- Reduced energy consumption and respected a constraint of delay, using **dynamic programming**.

## Skills

**Data Processing** (validation, aggregation, analysis) · **Dimensionality Reduction** (PCA, LDA, autoencoders)

**Machine Learning** (classification, regression, anomaly detection, clustering) · **Neural Networks** and **Deep Learning**

**Data Visualization** · **Optimization** (LP, CP, DP, EA, GA)

<b>Python</b>	Data processing (pandas, numpy, spark, dask) · Data visualization (matplotlib, seaborn, plotly)
<b>Programming</b>	Machine learning (scikit-learn, keras, XGBoost) · Optimization (scipy, pymoo)
<b>Database</b>	SQL, C/C++, Prolog, HTML/CSS, (basics: R, PHP, Lisp, x64 Assembly)
<b>DevOps</b>	MySQL, PostgreSQL, MondoDB, Oracle, neo4j
<b>Languages</b>	Linux, Git, Docker, Azure, Anaconda
	French (native), English (C1), Spanish (B2), Chinese (HSK2), Latvian (A1)

## Education

### University of Technology of Compiègne (UTC)

5-YEAR COMPUTER SCIENCE AND ENGINEERING DEGREE (EQUIV. MSc) — CGPA: **4.43/5.00**

*Compiègne, France*

*Sep. 2015 — expected Aug. 2021*

- Computer Science · Information Technology · Operations Research · Mathematics & Statistics · Physics
- Exchange semester: Riga Technical University, Latvia (*Aug 2017 — Jan 2018*)

### Coursera

SELF-DIRECTED LEARNING

- Stanford**: Machine Learning
- deeplearning.ai**: Neural Networks & Deep Learning, Improving Deep Neural Networks
- University of Michigan**: Python Data Structures, Data Visualization in Python, Applied Machine Learning in Python

## Extracurricular Activity

- Since 2018 **Training Manager & Photographer**, Pics'art — *photography skills development organization*
- 2018 — 2019 **Local Representative, Head of Communication**, ESN Compiègne — *international student organization*
- 2016 — 2017 **President**, La Foulée UTCéenne — *running club*
- 2015 — 2017 **Volunteer Rescue Worker**, La Croix Blanche — *first-aid organization*