Louis Le Toumelin

Engineer and PhD in artificial intelligence applied to meteorology.

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Driver's licence. 29 years old.

Education

2020–2023	**PhD: Artificial Intelligence and Meteorology**, *CEN/CNRM/CNRS/Météo-France*, Grenoble, France *Downscaling wind fields in complex terrain with deep learning for nivology.* Developping artificial intelligence models to predict wind at high resolution and accuracy over mountains.
2018	**Spring semester: arctic geophysics**, *UNIS*, Longyearbyen, Svalbard (Norway) Studying geophysic in the northernmost university. I took part to scientific fieldwork on the arctic terrain.
2015-2019	**Msc: Ecole Centrale de Lyon**, Ecully, France Engineering school accessed through competitive national exam. Major: energy.
2012–2015	**Bsc: Mathematics and physics preparatory classes**, *Lycée Masséna et CIV*, Nice and Sophia-Antipolis, France Three years of intensive preparation for engineering school entrance exam.

Professional Experiences

2023 - today	**Software Developer**, *ACRI-ST (as a consultant from Eekem)*, Grasse, France Working on the reprocessing of SLSTR instrument (level 1) from the Sentinel 3 satellite mission for the European Space Agency. I contribute to the migration and re-engineering of a production codebase from C++ to Python. I participate to the design, development, validation and production stages of this project which requires advanced skills in data processing, analysis and parallel computing.
2019	**Research engineer**, *Institut des Géosciences de l'Environnement*, Grenoble, 1 month
2019	**Internship: Climate modelling**, *Institut des Géosciences de l'Environnement*, Grenoble, 6 months
2017	**Internship: Business developper**, *Ooshot*, Paris, 6 months
2016	**Internship: Blue collar internship**, *Parfum Cosmetic World*, Mouans-Sartoux, 1 month

Skills

IT	Python (advanced), C/C++, Linux, Bash, Matlab, Excel, VBA, R, QGIS
Frameworks	Tensorflow, Scikit-Learn, Pytorch, Xarray, Pandas, Numpy, Dask
Code	Object-oriented and functional programming. Design patterns. Git. Packaging. Unit tests. CI/CD.

Projects

DEVINE	Downscaling model based on convolutional neural networks. Published in *Artificial Intelligence for the Earth System* in 2022.
NN+DEVINE	Bias correction model based on different artificial neural network architectures.
Extract Hendrix	Package to help downloading data on Meteo-France storage system. Coding with 3 other developpers.
Publications	9 scientific articles published (3 as first author).

References

Isabelle Gouttevin, *CEN/Météo-France*, Grenoble, isabelle.gouttevin@meteo.fr
Team Leader at the Snow Research Centre (CEN). PhD supervisor.

Languages - Other experiences - hobbies

Languages	French (native), English (fluent), Spanish (high school level).
Experiences	Food deliverer, tour guide, terrain experience in Artic, football coaching.
Sport	Football (competition), road bike, randonnée skiing.