Florent **Forest**

AI Engineer | Data & ML Expert with Research & Industry experience
PhD in Machine Learning | ISAE-Supaero Engineer (MSc)

f@florentfo.rest +41 78 220 03 01 Lausanne, Switzerland
florentfo.rest linkedin.com/in/florent-forest github.com/FlorentF9

AI Engineer & Researcher with 8 years of experience within both industry and academia, spanning diverse industrial sectors including aerospace, railway, biotech and agriculture. Experienced in machine learning, building large-scale data-driven applications and developing advanced algorithms on complex industrial data sets. Always eager to learn, collaborate and share knowledge.

Work Experience

Today – 2025 | **AI Software Engineer, Ecorobotix, Yverdon, Switzerland**

AI Engineering & MLOps

- Training, evaluation and deployment of deep learning vision models
- Profiling and performance optimization of embedded models on robotics device
- Continuous improvement of software tools & pipeline automation

Computer vision | Deep learning | MLOps | Edge ML | TensorRT | PyTorch | Python | Docker | Airflow | CI/CD

2025 – 2022 | **Scientist, EPFL (École Polytechnique Fédérale de Lausanne), Lausanne, Switzerland**

Researcher at IMOS (Intelligent Maintenance and Operations Systems) lab led by Prof. Olga Fink.

Research topics :

- Explainable AI & interpretable deep learning
- Domain adaptation
- Computer vision, Signal processing

Applications :

- Predictive maintenance, PHM
- Fault detection, diagnosis and prognosis
- Vision-based automated inspection

Other activities and skills :

- Scientific and technical writing/presentation
- Teaching at EPFL (lectures and exercises)
- Mentoring PhD, Master and Bachelor students
- Organizer and speaker at conferences
- Reviewer for journals and conferences

Research | Machine learning | Predictive maintenance | PHM | PyTorch | Python

2022 – 2021 | **Data Scientist & Software Engineer, Nagi Bioscience SA, Lausanne, Switzerland**

Development of data analysis and software tools for revolutionary worm-on-chip technology combining biology, robotics, optics, microfluidics and AI, for ethical and efficient bioassays.

- Built an end-to-end automated data analysis pipeline (AWS), increasing throughput and efficiency
- Developed deep learning models for microscopy image analysis (object detection and segmentation)
- Extracted relevant features from images and videos, in collaboration with biologists
- Front-end and back-end development, databases, APIs
- Embedded software development for robotics/optics/fluidics control
- Agile development, Management of subcontractor software devs

Machine learning | Cloud | AWS | PyTorch | Spark | Node.js | Vue.js | Electron | Docker | Python | Javascript

2021 – 2018 | **Data Scientist, Safran Aircraft Engines, Paris area, France**

Industry research contract. My role is to enable large-scale analytics of data generated by civil aircraft engines during flights, to develop scalable engine health monitoring algorithms, and apply research to industry use cases.

- Designed a generic Big Data processing pipeline for flight data analytics on the production cluster
- End-to-end implementation of health monitoring methodologies based on unsupervised learning
- Development and deployment of visualization apps
- Support engineers on distributed computing technologies

Data science | Machine learning | Aerospace | Hadoop | Hive | Spark | Scala | Keras | PyTorch | Python | MongoDB

October 2017 – April 2017 | **Intern, Airbus — Central Research & Technology, Toulouse, France**

Studied and applied various Artificial Intelligence methods to extract and query information from unstructured technical documents (scanned PDF, text, images) for cognitive assistant applications.

- Developed several deep learning models (computer vision, natural language processing) and chatbots
- Designed an interactive Polymer web application for data annotation and prediction
- Reading research articles

Deep learning | Python | Keras | TensorFlow | spaCy | Rasa NLU | HTML/CSS | Javascript | Polymer | MongoDB | REST

August 2016 – March 2016 | **Intern, CNES (French Space Center), Toulouse, France**
Implementation and validation of a Manual Thrust mode in an AOCS (Attitude and Orbit Control System) simulator, in order to analyze end-of-life experiments on the CoRoT satellite (PROTEUS family).
Space mechanics | Signal processing | Matlab | Simulink

June 2015 – February 2015 | **Intern, IRAP (Research Institute in Astrophysics and Planetology), Toulouse, France**
Contributed to developing an open-source scientific library enabling astrophysicists to perform statistical analysis of gamma ray data measured by telescopes.
Astrophysics | C++ | Python | Git

July 2014 | **Intern, ONERA (French Aerospace Lab), Toulouse, France**
Development of real-time software and deployment on Linux embedded systems.
Embedded systems | C | Linux

Education

2021 – 2018 | **PhD in Computer Science (Machine Learning), Université Sorbonne Paris Nord, Paris area, France**
LIPN lab (CNRS UMR 7030), A3 team (Machine learning). Research topics :
- Unsupervised learning (clustering, deep learning, self-organizing maps, visualization…)
- Scalable machine learning algorithms
- Big Data processing and distributed computing (map-reduce)
- Industrial applications in aerospace on aircraft engine flight data (time series)

2017 – 2013 | **Supaero Engineering Diploma (MSc), ISAE-Supaero, Toulouse, France**
Specialization in **Data & Decision Sciences** and **Space Systems Engineering**

2016 – 2015 | **Erasmus semester, TU Berlin, Berlin, Germany**
Master Luft- und Raumfahrttechnik (aerospace engineering).

2013 – 2011 | **Preparatory classes, Lycée Janson-de-Sailly, Paris, France**
Preparation in Mathematics, Physics and Computer science for the top French engineering schools.

2011 – 2008 | **Baccalauréat S, Lycée Marie Laurencin, Mennecy, France**
equiv. A-levels with highest honors.

Languages

French	●●●●●
German	●●●●●
English	●●●●●
Spanish	●●○○○
Chinese	●○○○○

Skills

Programming	Python, Scala, R, Java, C, C++, Caml, Flutter, Web (front/back)
Tools & Frameworks	Hadoop, Spark, PyTorch, scikit-learn, pandas, Airflow, TensorRT
Databases	SQL, Hive, Athena, PostgresQL, MongoDB, SQLite
Collaborative & DevOps	Git, CI/CD, Docker, Artifactory/Nexus
Cloud	AWS (S3, EC2, SageMaker, Lambda, RDS, Athena, SFN)
OS	GNU/Linux, Windows
ML Applications	Computer Vision, Natural Language Processing, Time Series (sensor signals), Audio/Speech processing
Industries	Aerospace, Railway, Civil Engineering, Biotech, Agriculture
Soft skills	Mentoring, Teaching

Referees

Prof. Olga Fink
Associate professor, EPFL
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Dr. Jérôme Lacaille
Emeritus expert, Safran group
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Prof. Mustapha Lebbah
Full professor, Université Paris Saclay
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