Fabien Allemand

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Personal Profile

As a final-year engineering student at Télécom SudParis, part of the Polytechnic Institue of Paris, I am trained to master leading-edge information technologies with a critical mindset. Specialised in data science and AI, I have gained the ability to manage complex machine learning projects. Persevering and meticulous, I enjoy working on theory as much as hands-on programming. Always looking for new challenges, I am looking forward to contribute to industry leading projects during a **six-month internship** starting in **April 2025** in the domain of **data science and AI**.

Education

Télécom SudParis Engineering School *Paris, France*

Sustainable Digital Technologies Engineering *Sept 2023 - Current*

- Putting an emphasis on management and sustainable development, this formation greatly strengthened my ability to think critically about the impact of the solutions I create. On top of the in-depth technical classes on statistics and machine learning, I was lucky enough to acquire an overview of the contemporary challenges related to data and AI.
- Deep learning for computer vision, Reinforcement learning, Generative AI, Statistics, Symbolic AI, Energy consumption (GPA: 3.65/4.00)

Télécom Physique Strasbourg Engineering School *Strasbourg, France*

Computer Science & Networks Engineering *Sept 2021 - Current*

- During my first years as an engineering student I learned how to master the technologies of the time to provide solutions that meet needs. I started a deep dive into computer science from theoretical knowledge and low level programming all the way to data science and AI.
- Machine learning, Unsupervised learning, NLP, Data mining, Data warehouse and metadata, Game theory

Work Experience

French Air Force *Mont-de-Marsan, France*

Internship *July 2024 - Aug 2024*

During this internship, I was responsible of the development of a Python REST API for a data science web application based on Dataiku Data Science Studio. I put into practice many of the skills I had acquired at engineering school, particularly in the areas of web application development and software engineering. Throughout the internship, I had to ensure the product quality in order to meet the ISO9001 standard while complying with the strict security rules enforced in this military context.

ARTEMIS Department - Télécom SudParis *Paris, France*

Research Work *Jan 2024 - June 2024*

Lasting a semester, this group project consisted of applying self-supervised deep learning techniques to hand gesture recognition. Trained on GPU with high fidelity motion capture data, our model was able to perform classification. An in-depth explainability analysis of our model showed that it is indeed able to recognise gesture accurately. Paper: `https://arxiv.org/abs/2406.12440`.

Alcatel-Lucent Enterprise *Strasbourg, France*

Partnership *Jan 2023 - June 2023*

As part of the training program, I participated in a long-term engineering project to develop an AI-powered Android application to improve road maintenance. Thanks to teamwork, we have succeeded in collecting a sufficient amount of high quality data to train an AI model.

CEMOSIS (Modeling and Simulation Center of Strasbourg) *Strasbourg, France*

Internship *June 2022 - July 2022*

For six weeks, I cooperated with a team of researchers to develop an online platform of services for building energy simulation. In particular, I worked on the conversion of files containing building geometric and thermodynamic data following the IFC standard. The development context required reverse engineering and code understanding skills.

Project

For more details: `https://faballemand.github.io/html/projects.html`

Learned Image Compression (2024 - today)	Research work on learned image compression on FPGA.
ezGPX (2023 - today)	Easy to use Python library for GPS eXchange Format (GPX) files.
3D Objects Classification (2024)	Classification of 3D mesh objects using state-of-the-art convolution and pooling layers designed for 3D mesh data.
Reinforcement Learning (2024)	Reinforcement learning on my first 2D video game created in 2021.
Defect Prediction on Production Line (2023)	Group project to develop a supervised learning solution for a real world industry problem.

Skills

Programming	Python (Numpy, Pandas, Scikit-Learn, PyTorch, TensorFlow), R, Matlab, Java, C/C++
Software	Dataiku Data Science Studio, Office software
Work Skills	Teamwork, Communication, Rigor, Determination, Efficiency and Regularity
Languages	French (native), English (C1, fluent), Spanish (B2)