

# Abdoulaye SAYOUTI SOULEYMANE

R&D Artificial Intelligence Engineer at Aiway

<https://abdoulaye-sayouti.github.io/>



## Profil

Innovative R&D AI Engineer with 3+ years of expertise in developing cutting-edge ML/DL models and pioneering 3D data processing solutions. Experienced in creating effective and open-source AI solutions that have contributed to improved product quality and operational efficiency for the companies.

## Work Experience

**Aiway** Aix-en-Provence, France  
R&D Artificial Intelligence Engineer Oct. 2022 - Present

At Aiway, I lead the development, training, and evaluation of 3D AI models for oral scan segmentation and optimization. These models are the cornerstone of **EASYMODEL** ([www.ai4dental.com](http://www.ai4dental.com)), a cutting-edge SaaS platform for orthodontic model creation, serving dentists and orthodontists worldwide.

### Key responsibilities :

- ❖ **Process Optimization:** Streamlining data preparation, training, and evaluation workflows to enhance model performance and align with client needs.
- ❖ **Data Curation:** Implementing advanced 3D data annotation strategies to significantly boost model accuracy.
- ❖ **Model Development:** Training and evaluation of 3D semantic segmentation models for various dental applications, ensuring they meet precise client specifications.

**Enedis AI Lab** Marseille, France  
R&D Artificial Intelligence Engineer Jun. 2021 - Sept. 2022

At Enedis AI Lab, I designed and implemented AI solutions for energy data analysis and natural language processing, automating critical processes in the energy sector.

### Key responsibilities :

- ❖ **Data Processing and Analysis:** Engineered custom NER datasets and processed electrical load curve data for actionable insights.
- ❖ **Models Development:** Trained and optimized various NLP models, including text classification and NER, with a focus on zero-shot learning to reduce operational costs.
- ❖ **Deployment and Accessibility:** Deployed containerized models and built user-friendly web interfaces, enhancing AI accessibility.

**Infineon Technologies** Padova, Italy  
Data Analyst Intern May-Sept. 2020

- ❖ **Dashboard Development:** Designed and developed a dashboard for real-time visualization and validation of the company's software, firmware and hardware development processes, in compliance with ISO 26262 "Road vehicles - Functional safety" and Automotive SPICE standards.

## Projects *(Details in my online portfolio)*

- ❖ **Secure RAG System Development:** Developed an open-source RAG pipeline combining hybrid encoding and retrieval with advanced reranking, winning **1st place** in **UnderstandTech's** international competition on **Trustii.io** plateforme ([Github link](#)). The solution enables secure offline AI document processing, featuring multi-format document handling and optimized GPU
- ❖ **AI Fashion Innovation:** Trained a specialized AI model for African fashion, under the Inclusive Fashion AI (InFashAI) initiative. Fine-tuned Stable Diffusion v1.4 with over 100,000 images, most through web scraping to boost African fashion representation.
- ❖ **AI Chatbot:** Collaborated in developing a humanoid-robot dialogue interface for NAO and Pepper robots, using RASA and machine learning for tasks like scheduling and social interactions.

## Education

- ❖ **M.Sc in Artificial Intelligence, Avignon** Avignon, France  
Center for Education and Research in Computer Science (CERI) 2020-2022
- ❖ **M.Sc in ICT for Internet and Multimedia (ERASMUS+ Mobility)** Padova, Italy  
University of Padova, Italy 2019-2020
- ❖ **Engineer in Telecommunications** Tunis, Tunisia  
Higher School of Communication of Tunis, University of Carthage 2017-2020

## Paper & Certifications

- ❖ HAPe: Optimizing Customer Relation by Automatic Task Distribution using Constrained Optimization and Natural Language Processing (**CIRED 2023 - Enedis**) Aug. 2023
- ❖ Mathematics For Machine Learning Specialization (**Coursera**) Nov. 2020
- ❖ Neural Network and Deep Learning (**Coursera**) Nov. 2019

## Personal Info

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- <https://www.linkedin.com/in/sayouti-souleymane-abdoulaye/>**

## Industries

- ▶ Telecommunications.
- ▶ Electricity.
- ▶ Building information modeling (BIM).
- ▶ Dental.
- ▶ Semiconductor.

## Skills

- **Programming Languages**  
Python, C, C++, Java, JavaScript, PHP
- **Machine & Deep Learning**  
Scikit-Learn, PyTorch, TensorFlow, Transformers, Vertex AI (GCP)
- **NLP**  
LLM, RAG, LlamaIndex, LangChain, LangGraph, Prompt Engineering
- **Data Processing**
  - ▶ **3D:** Open3D, PyTorch3D, MeshLab, IfcOpenShell
  - ▶ **General:** NumPy, Pandas, Hadoop, Talend
- **Databases**  
MySQL, PostgreSQL, Elasticsearch
- **Data Visualization**  
Tableau, Kibana, Dash
- **Cloud, DevOps & MLOps**  
Docker, GitLab, Jenkins, MLflow, Cloud Storage & Dataflow (GCP)
- **Web Development**  
Flask, ReactJS, Node.js

## Languages

- ❖ **French**
- ❖ **English**