



# Célian DI GIOVANNI

## Profile

Final Year Engineering Student (M.Sc. Level) specializing in **Artificial Intelligence** applied to **Physiological Signals** and **Clinical Data**. Experienced in real-world ECG data analysis, biometric classification, medical image segmentation, application validation in hospital settings, and clinical data structuring.

## Informations

Célian DI GIOVANNI

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## Education

Digital and Electronic Engineering (M.Sc.) – 2023 - Present  
e-Health Option  
ISEN Méditerranée, Toulon

Bionics Engineering – Erasmus Semester Sep 2024 - Feb 2025  
Università di Pisa

CPGE PCSI / PC 2021 - 2022  
Lycée International de Valbonne

Baccalauréat Mathématiques & Physique 2021  
Chimie - Mention Bien  
Institution du Mont Saint-Jean, Antibes

## Projects

Embedded AI for Epileptic Patient Monitoring Present  
STMicroelectronics Hackathon – Ongoing Project

- Analyzed **ECG signals** from the PhysioNet database (CHB-MIT).
- Calculated Heart Rate Variability (HRV) indicators: **RMSSD**, **SDNN**, **LF/HF**.
- Trained **Tensor Flow Lite** AI models on **Edge Impulse** for conversion and compression for execution on **STM32** target.
- Explored results show detection of ECG alterations consistent with documented epileptic seizure signatures.
- Results non statistically validated yet.

Skin Maven Bandage 2025  
Biometric Classification (M1 Project)

- Created the database from skin bio-impedance measurements of 83 volunteers.
- Performed **Data Augmentation using SMOTE** and randomization.
- Trained and compared multiple models: **Logistic Regression**, **Random Forest**, **Gaussian**, **KNN**, **SVC**.
- Achieved **90%, 60%, 20% accuracy**, for respectively sex, age, skin tone classification using Random Forest.

## Skills

Python

AI & Data Science:  
Classification, Deep  
Learning (CNN),  
Feature Engineering,  
Embedded AI

Signal Processing:  
ECG, FFT, Bio-  
impedance

Computer Vision:  
segmentation,  
thresholding d'Otsu,  
Sobel, Mathematical  
Morphology

Biostatistics

Neurosciences

Java / C

# Languages

English (B2 Cambridge) ●●●●●

Spanish ●●●●●

# Hobbies

- Trips, History and Culture
- Accoustic, Electronic Guitar
- Rock Music, Cinema
- Paddle, Judo, Badminton, Running
- Volunteering: Maraude Ordre de Malte

## Segmentation of Regions of Interest on Radiographic Images

2025

- Full implementation in **Python and Octave**.
- Methods used: **Otsu's thresholding**, RGB, grayscale, erosion, and dilation.
- Result: Functional segmentation validated on brain and thorax radiographs.

# Employment

## QA & Clinical Data Engineering Internship

Jun 2025 - Sep 2025

Pôle Pharmacie CHU de Nice

- **System Validation (QA):** Performed **functional validation** of a mobile medical follow-up application (MUSE project).
- Defined use cases and **test scenarios**, and provided reports to development teams.
- Acted as the interface between medical teams and developers.
- **Data Structuring:** Extracted and structured clinical data from DOCX/XLSX reports.
- Automated data centralization using **Python (openpyxl, python-docx)** for subsequent analysis in Excel / Power Query.

# Certificates

## First Aid Certificate level 1