# Mohamed Helmi Lakhder

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linkedin.com/in/helmipl | Tunis, Tunisia | French, English, Arabic

## EDUCATION

**National Institute of Applied Science and Technology**                                   Sept. 2024 – Present
*ENGINEER's DEGREE, ICT*

**Higher Institute of Information Technologies and Communications**              Sept. 2021 – May 2024
*B.S. IoT, Embedded Systems* | ***GPA***: *4.0/4.0*
- **Valedictorian** for the 2021/2022 and 2022/2023 Classes

## MAIN TECHNICAL SKILLS

- **Languages:** JavaScript, TypeScript, Python, C++
- **Technologies:** React.js, Next.js, Flutter, Express.js, Django, FastAPI, LangGraph, Spring Boot, Docker, Node-RED, Apache Airflow, Ansible, Prometheus, Grafana, Selenium

## EXPERIENCE

**Biolyt AI · Full Stack Data Engineer**                                                    Jul. 2025 – Aug. 2025
*Summer Internship*                                              *Bengaluru South, Karnataka, India . Remote*
- Gained a deep understanding of the healthcare business plan, including clinical trials, FDA processes, and biotech operations.
- Contributed to a FastAPI-backed multi-agent system using LangGraph, delivering actionable clinical and regulatory insights, with streaming events displayed through React components, including chat interfaces, tables, and interactive graphs.
- Managed a DAG using Apache Airflow to fetch and process clinical and regulatory data, applying Slowly Changing Dimension (SCD) techniques inside Docker containers.
- **Keywords:** React.js, FastAPI, LangGraph, Apache Airflow, Docker, MongoDB, SCD

**Novencia Group · Full Stack Developer**                                                  Feb. 2024 – May 2024
*End of Studies Internship*                                                        *Montplaisir, Tunis . On-site*
- Collaborated with a team of 4 to develop a web and mobile SaaS solution for HR functionalities, offering generic and personalized features, supported by a back-office application to monitor client activities.
- **Keywords:** Next.js, Flutter, Express.js, Redux, MongoDB, Tailwind CSS

**MAE Assurances · Back-end Developer**                                                     Jul. 2023 – Aug. 2023
*Summer Internship*                                                                *Ariana, Tunis . Hybrid*
- Created a platform to facilitate interactions and transactions in the insurance domain.
- **Keywords:** Face Recognition, Django, PostgreSQL, Bootstrap, Chart.js, Prism.js

## PROJECTS

**Classification of Cardiac Anomalies from ECG Signals**                                              May. 2025
- Collaborated in a 4-person team to build a machine learning system classifying cardiac anomalies from ECG signals, including preprocessing with bandpass/notch filtering, normalization, and feature extraction.
- Trained and evaluated multiple ML models (Random Forest, SVM, KNN, Decision Tree) to achieve accurate heartbeat classification.
- Implemented an API for real-time predictions with FastAPI and delivered a user-friendly interface via Next.js frontend.

**Cho3la**                                                                                           Dec. 2023
- Developed a flame and gas detection application with a 4-person team using ESP8266 NodeMCU with flame and gas sensors. Data is sent to an ESP32, which publishes information via MQTT to a Node-RED dashboard for real-time visualization, while simultaneously sending notifications to subscribed Telegram users.

**HMKSocialHUB**                                                                                     Mar. 2023
- Built a social platform with a 3-person team using Django, enabling user interactions, content management, and admin controls, supported by a PostgreSQL database, Cloudinary media management, and CI/CD deployment via Render.