

RACIEL D. LAGO

AIoT Engineer | Smart Energy & Smart Grids | Embedded AI & Industrial IoT

Location: Cuba (*Open to relocation with visa sponsorship*) | **Email:** racielago@gmail.com |

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GitHub: <https://github.com/racielago> | **Portfolio:** <https://racielago.github.io/my-portfolio/>

PROFESSIONAL SUMMARY

Electrical Engineer with expertise in Artificial Intelligence (AI), Internet of Things (IoT), and Embedded Systems. Specializing in AI-driven solutions for Smart Energy, Smart Grids, and Industrial IoT. Expertise in **AI for Energy Optimization, Edge AI, and predictive analytics**. Proven experience in **real-time AI for embedded systems and AIoT applications for sustainability, renewable energy, and industrial automation**. **Developed an AI model (LSTM) for energy demand forecasting**, achieving **0.012 kWh RMSE**, improving provincial energy planning. **Designed an AIoT-based irrigation system** with nRF52 & supercapacitors, reducing **water consumption by 30% in agricultural fields**. Created an AI-enhanced solar dryer system with Arduino, improving energy efficiency by 15-20% and reducing operational costs. Implemented a BLE Mesh network for real-time monitoring of banana plantations, ensuring low-latency, energy-efficient data transmission. Demonstrated leadership in AI research and technological innovation. Open to opportunities in AI & IoT with visa sponsorship. Open to remote opportunities.

CORE SKILLS

- **Programming Languages:** Python, MATLAB, R, C/C++, Java, Rust, Assembly, Scala.
 - **AI & Machine Learning:** TensorFlow, PyTorch, Scikit-learn, XGBoost, Machine Learning, Deep Learning, Computer Vision, NLP, Energy Optimization, Energy Demand Forecasting.
 - **Embedded Systems & IoT:** nRF52, ESP32, STM32, Raspberry Pi, Arduino, ARM Cortex, Atmel AVR, FreeRTOS, Zephyr, BLE, LoRa, MQTT, Zigbee, AIoT for Smart Grids.
 - **Smart Energy & Power Systems:** Grid Optimization, Energy Demand Forecasting, Renewable Energy, AI for Smart Grids, AI for Energy Optimization.
 - **Cloud & Edge Computing:** AWS Greengrass, Azure IoT Edge, Docker, Kubernetes, Jenkins, MLflow, Edge AI deployments, Real-time data processing, Edge analytics for local processing.
 - **Data Science & Visualization:** Power BI, Tableau, SQL/NoSQL, Hadoop, Spark.
 - **Soft Skills:** Technical Leadership, Team Collaboration, Agile Methodologies, Critical Thinking.
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LANGUAGES

Spanish (Native), **English** - C1 Advanced (*Progressing towards C2*), **German** - A1 Basic (*Learning towards A2*), **Dutch** - A1 Basic (*Learning towards A2*), **French** - A2 Basic (*Learning towards B2*).

PROFESSIONAL EXPERIENCE

Embedded Systems, IoT, and Home Automation Specialist

ILIOSTEC | Sept 2024 – Jan 2025

- **Designed an AI-powered solar dryer system**, improving energy efficiency by **15–20%**. Developed **microcontroller firmware** with Arduino for automation. Improved drying efficiency, maintaining consistent humidity levels throughout the process, minimizing the risk of overheating and losses. 25% reduction in drying time by optimizing temperature and airflow control automatically. The system provided greater autonomy, reducing the need for manual intervention to adjust parameters and monitor the process.

Embedded AI & IoT Engineer

(Remote Contract – France) | Sept 2024 – Present

- **Developed a BLE Mesh Network with nRF52 for real-time monitoring of banana plantations**, enabling efficient communication between distributed sensor nodes. 20% reduction in operational costs due to optimization in the use of inputs and treatments. 45% improvement in monitoring efficiency, reducing the need for manual field inspections. Enhanced traceability and fruit quality, enabling detailed tracking from planting to harvesting.
- **Collaborated with an international team**, integrating real-time sensor data with a mobile app.
- **Designed an AIoT-based irrigation system**, reducing **water consumption in plantations and electric showers**. 30% reduction in water consumption in agricultural irrigation systems through adaptive flow control based on soil conditions and plant needs. 27% reduction in water waste in electric showers by regulating flow and ensuring only the necessary amount of water is supplied. Successful implementation in real environments, improving the efficiency of water resource use without compromising comfort or system effectiveness. Implemented an innovative charging system using supercapacitors, extending IoT device autonomy.

Founder & Director, AI and Smart Grids Research Center

Feb 2024 – Present

- **Established and lead** a research center focused on **AI-driven optimization for energy systems and Smart Grids**.
- **Directed a multidisciplinary team**, collaborating with academia and industry to drive innovation in **AIoT for sustainable energy solutions**.
- **Developed advanced AI models for energy demand forecasting**, achieving a **0.012 kWh RMSE** and improving the **provincial energy planning**.
- **Designed predictive analytics solutions** to enhance **energy distribution efficiency** and support **renewable energy integration**.
- Implemented **Edge AI for Smart Building**, enabling real-time **energy consumption monitoring** and optimizing predictive maintenance for urban infrastructure.

FEATURED PROJECTS

- **Edge AI for Agriculture** – Created an **AI-powered monitoring system** for precision farming using **nRF52 & BLE sensors**. (*nRF52, C/C++, Embedded Systems, TensorFlow Lite, Embedded ML*).
- **Hybrid Photovoltaic Energy Prediction** – Built an **LSTM-XGBoost hybrid model** achieving **RMSE of 0.016 kWh**, improving solar power predictions. (*Python, LSTM, XGBoost*).
- **Edge AI for Sustainable Cities** – Designed an **Edge AI system for Smart Cities**, allowing real-time monitoring of **energy distribution** and **predictive analytics for infrastructure management**. (*Edge AI, Embedded Systems, TensorFlow Lite, Embedded ML*)

🔗 [GitHub & Portfolio: See Full Case Studies](#)

EDUCATION & CERTIFICATIONS

🎓 **BSc. Electrical Engineering** – University of Oriente, 2022 (*Graduated with Honors*)

🎓 **nRF52 & BLE IoT Certification** – Nordic Semiconductor