

RAFAEL MOREIRA DA COSTA NUNES RIBEIRO

ELECTRONIC AND COMPUTER ENGINEER

📍 Braga, Portugal

☎ (+351) 916 544 008

🌐 [linkedin.com/in/ribeiorafa](https://www.linkedin.com/in/ribeiorafa)

🐙 github.com/rmcnribeiro

✉ rmcn.ribeiro@gmail.com

🌐 rafaelribeiro.space

HIGHER EDUCATION

Bachelor's Degree (5 year) in Electronic and Computer Engineering (GPA 7.6/10)

📅 Mar 2018 - Sep 2025

Universidade Federal do Rio de Janeiro (UFRJ)

[Thesis Title: "10-Year Dementia Prognosis: Applying Machine Learning Models and Explainable AI Techniques to Identify Modifiable Risk Factors"](#)

Academic Exchange Program

📅 Sep 2022 - Dec 2022

Aalto University - School of Electrical Engineering

EXPERIENCE

TwinStudio | Casais Group (Braga, Portugal)

TwinStudio, part of Casais Group, is focused on Digital Twins solutions for construction. In 2026, the company released "GoTwin", a **Digital Twins** and **Facility Management software** with **real-time building visualization**, integrated asset and **maintenance management**, and **data-driven insights** that optimize operations throughout the building lifecycle.

Software Engineer (IoT Solutions Focused)

📅 Jun 2026 - Present

- Implemented a new **Cloud infrastructure** to make both the API and the database scalable
- Backend **coding and review**
- Participated on the **integration of different systems** with the GoTwin ecosystem
- Developed **IoT Monitoring Solutions** for a critical step on the prefabrication pipeline (partnership with BluFab)
- Participated on the IoT roadmap decisions for the next 3 years

Software Engineer (IoT Solutions Focused) Trainee

📅 Jun 2025 - May 2026

- Designed and implemented a gateway for the IoT system using **NodeJS, WebSockets and MongoDB**
- Contributed to the architecture, modelling and implementation of the **system's backend** IoT layer
- Implemented a **VPN (Wireguard)** for security, gateway maintenance and remote access (**SSH** and **SFTP**)
- Administered Linux environments, created **logging, monitoring** and developed **automation** flows using Shell Script
- Set up, configured and maintained **cloud infrastructure** on AWS
- Managed **containers** and **virtual machines (VMs)** on the gateway using **Docker** and **Proxmox**
- Maintained, monitored and improved the system's **RestAPI** (NodeJS)
- Integrated sensors actuators with **Artificial Intelligence (AI)** tools for intelligent control and monitoring
- Configured and developed solutions for the **Boston Dynamics Spot Robot**, in partnership with TOPBIM

TYR Energia (Rio de Janeiro, Brazil)

Tyr Energia is a company operating in the free energy market, providing sustainable and cost-efficient solutions with a strong focus on renewable energy and intelligent monitoring for businesses across multiple sectors.

Data Intelligence Analyst

📅 Nov 2024 - Apr 2025

- **Automated** the company's billing process using **Python** and **third-party APIs**
- Implemented **large language models (LLMs)** to build an internal retrieval-augmented generation (**RAG**) system
- Developed web **automation** bots using Selenium (Python)
- Designed, implemented and maintained the company's **cloud infrastructure** on Oracle Cloud

Data Intelligence Intern

📅 Sep 2023 - Nov 2024

- Designed and implemented the **MySQL database** for the company's commercial department
- Developed **automation pipelines** for multiple business areas
- Built automated **dashboards** using Looker Studio and Power BI for the Finance and Commercial teams
- **Automated** the commercial team's **ETL data flow** using **Python** and **SQL** on Oracle Cloud, reducing the data refresh interval from weekly to 15 minutes
- Defined and implemented **KPIs** for the Finance and Commercial teams

UFRJ Analytica (Rio de Janeiro, Brazil)

📅 Oct 2019 - Aug 2022

UFRJ Analytica is the data science competition team of the Federal University of Rio de Janeiro.

Co-founder and Head of Competition

- Led teams in **hackathons** and **datathons**, including Hacking.Rio 2021, where two Analytica teams won among 280+ competing teams
- Managed a group of 20+ members, coordinating the development of **educational materials** and study plans for new joiners
- Oversaw the recruitment process for new members and supported the acquisition of new projects and partnerships
- Collaborated on **data projects** with the **Rio de Janeiro City Hall** and the Rio de Janeiro State Health Department

Undergraduate Technological Development and Innovation Researcher (Machine Learning)

- **Researched** and applied state-of-the-art **document classification** techniques for large-scale **fraud detection**, achieving over 95% accuracy and a high F2 score
- Collaborated with the CVM **Data Science team** and UFRJ Mathematics Institute faculty to design, validate, and refine models
- Built an **NLP pipeline** in Python (TF-IDF, spaCy, NLTK, Word2Vec), including feature selection using Mutual Information and hyperparameter tuning with GridSearch
- **Deployed** the best-performing model for internal use via a Streamlit application

VOLUNTARY WORK

COVID-19 Data Analysis and Prediction

Extension Volunteer - GT Coronavírus/UFRJ/Rio de Janeiro City Hall

- Provided **data-driven decision-making insights** for the Rio de Janeiro City Hall during the pandemic
- Collected, processed, analysed, and created **data** visualizations for COVID-19 data from various countries
- Developed **predictive models** for new cases, deaths, and hospitalizations using Python
- **Implemented a compartmental model** based on the latest epidemiological literature, used in the Public Prosecutor's Office of the State of Rio de Janeiro (MPRJ)'s decision-making process regarding lockdown in the city

COVID-19 Dashboard

Extension Volunteer - GT Coronavírus/UFRJ/Secretaria de Saúde do Estado do Rio de Janeiro

- **Processed, cleaned, and aggregated COVID-related data** for the Rio de Janeiro State Health Department
- Developed and maintained a data visualization **dashboard** for the coronavirus pandemic in the state of Rio de Janeiro
- Created and maintained the "Covidímetro", an indicator of the contagion rate per epidemiological week

PRIZES

3rd Place (Team Charneira) - Hacktudo: 2024

Hackathon promoted by Bemobi. 107 teams subscribed to the competition.

- Topic: How can Bemobi use **GenAI** to provide a better experience for its customers?
- Solution developed: A **B2B2C ecosystem** called "OmniChat" - a **chatbot** with contextual understanding for customers, and for decision-makers, a dashboard featuring each conversation summarized by **GenAI**, along with suggestions for new products based on this history.

Winner Team (UFRJ Analytica)- Hacking.Rio 2021

Annual hackathon, with "Vale" as main sponsor. This year, 282 teams registered for the event.

- Development of an **interactive dashboard** to facilitate the visualization of climate action indicators
- Provided information to guide Vale's decision-making, aiming to minimize incidents in conservation units

Winner Team (UFRJ Analytica) - Open Data Day (ODD) 2021

Datathon organized by the Base dos Dados organization in partnership with Fundação Getúlio Vargas (FGV).

- Creation of a document focused on understanding how the use of **open data** can help reduce inequalities in Brazil, based on the **Sustainable Development Goals (SDGs)**. The submission can be viewed at this [link](#)

Winner - Master the Mainframe 2019 Part 2 (IBM)

Master the Mainframe contest is a Mainframe programming challenge that is organized annually by IBM.

- Challenges in the **IBM Z Mainframe** environment, including creating and manipulating data partitions, modifying programs, as well as creating and executing JCLs
- Certificates from the [2019](#) and [2020](#) editions can be viewed via the links and on LinkedIn

LANGUAGE SKILLS

Portuguese

Native (C2)

English

Fluent (C1)

TOEFL IBT 110/120

Spanish

Intermediate (B1)

Finnish

Beginner (A1)

Felipe Barros Costa

Product Manager

Tyr Energia

Phone: +55 21 98881-6871

Email: felipe@tyrenergia.com.br

HARD SKILLS

Python (Libraries and Models)

Machine Learning and GenAI: Sklearn | XGBoost | CatBoost | Facebook Prophet | Numpy | SciPy | LangChain | PineconeAPI | OpenAI API | Gemini API
Data Visualization: Matplotlib | Seaborn | Plotly | Streamlit | Dash |
Others: Requests | Flask | FastAPI | Selenium | BeautifulSoup | SQLAlchemy

System Infrastructure

Databases: MySQL | PostgreSQL | MongoDB | Firebase | Pinecone
Languages: JavaScript | C | C++ | Shell Script | Powershell
Infrastructure: Docker | AWS ECS | AWS EC2 | AWS SES | AWS ECR | Oracle Cloud | Cron | Nginx | Redes de Computadores | Linux | Proxmox | Git/GitHub | Wireguard VPN | SSH | SFTP

Engineering

LTSpice | OrCad | KiCAD | AutoCAD | Ultimaker Cura | ESP32 | Arduino | Node-RED

Others

PowerBI | Looker Studio | LaTeX | Excel | Canva | Visio | MATLAB | n8n