

João Lucas Blum Kunzel

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Nationality: French

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Senior Machine Learning Engineer | MLOps & Industrial AI.

Work Experience

since 2021
5 years

Data Scientist

Renault Technocentre – Guyancourt, France

- **Awarded Renault's Innovation Trophy: Architected and Deployed** an end-to-end ML production pipeline on **GCP (Vertex AI)** for battery preventive maintenance. Automated model run and monitoring, projecting **€M+ annual savings** by reducing battery field failures.
- Engineered scalable data ingestion & ETL pipelines to process **petabyte-scale** vehicle telemetry. Optimized **BigQuery** partitioning and clustering, reducing query costs and enabling real-time model inference for fleet-wide performance.
- Architected and deployed a **cloud-native battery dimensioning platform** on GCP; integrated real-world telemetry with physics-based simulations to enable precise battery sizing. Full-stack service using **Python and Streamlit**, utilized by Renault engineering teams to optimize battery coverage across diverse client driving profiles.
- **Architected the end-to-end industrialization** of battery and powertrain analytics tools: transformed raw vehicle telemetry into a **scalable predictive service** using Python and GCP, providing automated battery SOH estimation, BMS fault estimation and usage forecasting, for millions of connected vehicles
- Developed an anomaly **detection model** of motor images used for industrial quality control in PyTorch.

2018-2021
3 years

Electronic Development Leader

Renault Technocentre – Guyancourt, France

- Directed end-to-end HW/SW development for high-voltage battery systems (BMS) across EV/HEV platforms, managing Quality, Cost, and Delivery (QCD) targets.
- Enforced **ISO 26262** functional safety standards; conducted comprehensive software audits to ensure 100% compliance for safety-critical systems.
- Supervised and resolved software bugs for both prototype and serial production vehicles using C++ and Matlab/Simulink.

Education

2022
1 semester

ENSAE-ENSAI, France

Data Scientist Certification

Key modules: Classification and regression analysis, supervised and unsupervised machine learning algorithms, predictive statistical models, Deep learning, NLP, Big Data technologies

2016-2017
3 semesters

ARTS ET MÉTIERS PARISTECH, France

Mobility and Electrical Vehicles Msc.

2011-2015
5 semesters

ÉCOLE CENTRALE DE NANTES, France

Generalist Engineer Undergraduate Degree.

Key modules: Algorithms, OOP, robotics, dynamic systems, business and innovation, renewable energies

2009-2015
8 semesters

UNIVERSIDADE FEDERAL DO RIO GRANDE DO SUL, Brazil

Electrical Engineering Undergraduate Degree

Key modules: electronics, programming and algorithms, instrumentation, linear systems, optimization, control systems, electrical machines, electrical networks

Technical And Linguistic Skills

Programming: SQL, Python (Sklearn, Pandas, PyTorch, Tensorflow), R, Spark, C++, Matlab/Simulink
Data & Cloud: GCP (BigQuery, Vertex AI), Looker Studio, Gitlab CI/CD, Jupyter, Agentic VScode
Domain Expertise: Predictive Maintenance, Battery Modeling, ISO 26262, Signal Processing, Cloud Development
Language: English (C2), French (C2), Portuguese (Native), Spanish (B1)
Personal interests: Piano (Classical/Jazz), Strength training, Mountain Hiking, International Travel