

## Alexandre Spiri

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## Summary

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Senior software engineer with 7+ years of experience leading machine learning initiatives and driving enterprise AI strategy in high-stakes industries. Core strengths include strategic leadership, mentoring, and designing scalable ML systems. Proficient in machine learning, software development, and cloud computing, with a career goal to leverage expertise at Meta to enhance AI capabilities.

## Experience

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### AI Engineering Manager

*ROLLS-ROYCE Bristol, UK June 2024 – Present*

- Lead machine learning projects across 3 divisions (15k engineers), aligning initiatives to OKRs and product-centric delivery tied to £10M in business value.
- Delivered 30+ ML & generative AI initiatives via Agile and a stage-gated lifecycle, driving £10M+ impact across Civil Aerospace, Defence, and Power Systems.
- Designed and implemented scalable ML solutions, developing end-to-end production-grade RAG pipelines, accelerating technical report generation for thousands of users and cutting engineering decision cycles by 20%.
- Established a federated AI operating model anchored by a central CoE; implemented AI Safety & Ethics governance, accelerating compliant adoption and enabling faster enterprise-scale deployments.
- Mentored a 13-person team (data scientists & engineering managers) to embed reusable MLOps components on Databricks, cutting per-use-case delivery time by 30%.

### Chief of Staff to Chief Technology Officer

*ROLLS-ROYCE Bristol, UK July 2022 – July 2024*

- Strategic advisor to CTO, driving cross-functional engineering alignment and executing strategy using structured planning (SWOT, OKRs).
- Defined and drove technology strategy leveraging Microsoft Azure cloud services to improve engineering data accessibility, analytics, and collaboration across the Group.
- Delivered 5 major technology transformation initiatives, generating £100M+ in productivity and efficiency gains.
- Co-designed and implemented an enterprise-wide organisational model, improving asset utilisation and enabling cross-divisional delivery.
- Authored and presented monthly Engineering, Technology & Safety updates to the Board, providing data-driven insights to shape executive-level strategy.

### Applied Machine Learning Engineer

*ROLLS-ROYCE Bristol, UK August 2020 – July 2022*

- Delivered physics-informed ML models improving Tempest (UK defence fighter) thermal management performance by 15%, integrating MBSE with ML optimisation in Python.
- Productionised ML models into operational platforms with automated retraining and monitoring workflows, ensuring sustained performance at scale.
- Led Lean Six Sigma Black Belt initiatives to standardise physics-based modelling workflows, delivering £400K+ savings through model reuse across sites.

### Applied Data Scientist

*ROLLS-ROYCE Derby, UK March 2020 – August 2020*

- Applied advanced data analytics in Python to investigate and resolve three critical safety issues in the Trent 1000-TEN (B787) air and fuel systems.
- Combined statistical analysis with system modelling to identify root causes and deliver an optimised air system design meeting EASA/CS-E compliance.

### Aerospace Engineer

*ROLLS-ROYCE Derby, UK September 2018 – March 2020*

- Developed a Python-based calibration tool automating transient analysis workflows, achieving a 5× speed improvement for Trent 1000 stability testing.
- Designed the Intermediate Pressure Compressor Nozzle Guide Vane for the Trent XWB engine, enhancing overall performance by 1%.

## Education

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INSTITUT NATIONAL DES SCIENCES APPLIQUÉES (INSA)

*M.Eng in Mechanical Engineering 2011 – 2017*

**NANYANG TECHNOLOGICAL UNIVERSITY**

*Exchange Program in Aerospace Engineering (M.Eng.) 2016 – 2017*

## Projects

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AI-Enabled Publishing Business – [Freelance]

- Founded an AI-enabled publishing business leveraging LLMs and generative image models to design, market, and distribute 12,000+ products globally via Amazon KDP.
- Built rapid product workflows, scaled e-commerce operations, and applied data-driven experimentation.

## Skills & Interests

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Technical: Machine Learning, Generative AI, MLOps, Python, Java, SQL, Microsoft Azure, AzureML, Databricks, PowerBI

Language: English (Fluent), French (Native), German (Conversational), Chinese (Basic)

## Certifications

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**AI/Cloud Databricks Generative AI Associate (Sep 2025)**

**Professional RAeS Chartered Engineer (2023)**

**Process Improvement Lean Six Sigma Black Belt (2024)**