Loïc Bélec

Enterprise Cloud & Data Architect – Technical Team Lead

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PROFILE

Experienced architect with over a decade spent in a high-pressure, data-intensive environment: Formula 1.

SKILLS

- Cloud Architecture
- Data Platform Design
- Terraform & IaC
- Python & Data Engineering
- FinOps Cloud Strategy

LANGUAGES

- French
- English
- Mandarin Chinese
- Spanish

PROFESSIONAL EXPERIENCE

Alpine Racing
Cloud & Data Architect – Technical Team Lead
01/2023 – present | Viry-Châtillon, France

- Leading end-to-end architecture of a **hybrid data platform**, combining on-premise infrastructure with **Microsoft Azure**, and integrating business-critical systems (SAP, 3DEXPERIENCE, telemetry, legacy tools); initiated **GCP migration assessments** for selected workloads as part of a long-term cloud strategy.
- Designed a secure **hub-and-spoke network topology** with dedicated *ExpressRoute*, ensuring low-latency, high-throughput connectivity between the factory and Microsoft datacenters.
- Defined and implemented an enterprise-wide **data governance strategy** using Microsoft Purview, aligned with GDPR requirements and compliant with TOGAF principles.
- Promoted **FinOps** and **DevSecOps** best practices across cloud-native pipelines, incorporating policy-as-code and environment-as-code logic to ensure auditability and cost-efficiency.
- Acted as **architecture referent** in technical boards and strategic initiatives led by the Executive Committee.
- Managed a team of 6 experts (cloud architects, data engineers, DevOps), delivering scalable designs and mentoring them on solution ownership and **engineering excellence.**
- Developed a **knowledge graph** connected to Azure Synapse to enable natural language querying of engineering and business data.

Alpine F1 Team
High-Performance Data Platform Architect
07/2018 – 12/2022 | Viry-Châtillon, France

- Conducted a comparative benchmark (IBM Watson, InfluxDB, Azure Data Explorer, etc.), ultimately selecting **kdb+** for its unmatched performance on time-series data.
- Designed and deployed a full-stack **Azure infrastructure** (dev/test/prod), fully automated using **Terraform** and infrastructure-as-code best practices.
- Integrated **Kafka** across both factories and trackside environments, ensuring real-time, low-latency data ingestion.
- Co-designed the **engine data architecture** in collaboration with the UK-based chassis and aerodynamics teams, aligning on data models for cross-domain analysis.
- Acted as a key interface between **engineering teams and data teams**, translating physical constraints into actionable and scalable data structures.
- Led the **FinOps strategy**, ensuring cloud resource usage aligned with operational rhythms and seasonal performance budgets (including Grand Prix weekends and testing campaigns).
- Managed telemetry storage and HPC workloads using **NetApp** technologies, in close collaboration with Microsoft and NetApp experts. Participated in early previews of **Azure NetApp Files**, optimizing the full telemetry lifecycle from ingestion to long-term archival.

PROJECTS

RAG System + GPT
Deployed a GPT model connected to the enterprise knowledge graph, enabling natural language queries on business data. Designed and fine-tuned a custom LoRA model locally to enhance domain-specific performance.

Rust CLI for ETL
Developed a command-line interface in Rust to boost the performance of data pipelines.

AWARDS

Prix de la Photographie des Maisons du Voyage 2012
Le Monde
01/2013
Exhibition at Place Saint-Sulpice, Paris

CSC Scolarship
Chinese Scolarship Council
09/2012
Recipient of the Chinese Government Excellence Scholarship (CSC)

INTERESTS

Powerlifting
560 kg total in the -93 kg category

Cycling
Regular bike commuter, cycling 50 to 100 km per week

Photography
Former President of the Arts & Métiers Photography Club

Renault F1 Team
Data Engineer
02/2014 – 06/2018 | Viry-Châtillon, France

- Designed an **object-oriented MATLAB framework** for race-specific technical analysis — still in use today across performance teams.
- Connected **SAP**, **TeamDB**, and **Atlas** systems to enable engine parts tracking and **predictive maintenance**
- Automated **engine performance reports** for Grand Prix weekends, improving turnaround and consistency for engineering reviews.
- Promoted **data culture** within technical teams by structuring analytical workflows and raising awareness around data quality and usage.

Industrial Department of Tongji University
Researcher – Master's Project
09/2012 – 12/2013 | Shanghai, China

- Conducted research on **U-shaped assembly line balancing problems (U-ALBP).**
- Reviewed, categorized, and implemented optimization algorithms in **MATLAB**, including **ant colony optimization** techniques.
- Performed **comparative analysis through case studies** and authored a research thesis on algorithmic performance and industrial applicability.

EDUCATION

MSc Industrial and Mechanical Engineering
Tongji University
09/2012 – 12/2013 | Shanghai, China
College of Industrial and Mechanical Engineering

Master's Degree in General Engineering
Arts & Métiers ParisTech
09/2010 – 12/2013 | Paris, France

COURSES

Theory and Practice of Machine Learning
Centrale Supélec Executive Education
06/2021 | Paris, France
Structured approach to machine learning: supervision, cross-validation, regularization, linear models, SVM, neural networks.

PUBLICATIONS

Proceedings of the 21st International Conference on Industrial Engineering and Engineering Management 2014
06/01/2015