



SAM DUMONT

Freelance Cloud & AI Platform Engineer | ex-AWS

Data platforms · Garmin apps · Sensor firmware · Remote-first

sam@dropbars.be +32 487 633 993 Laeken, Belgium Born 1987-04-02

<https://dropbars.be> <https://www.linkedin.com/in/samdumont/>

10+ years building production platforms from cloud infrastructure to embedded C++ sensor firmware. Currently running DPG Media's data platform and shipping LLM tooling that finds waste humans miss.

EXPERIENCE

DPG Media ACTIVE

Data Platform Team Engineer | Oct 2023 – Present | Freelance · Full-time · Antwerp, Belgium · Remote

SUMMARY

- Running the data platform for the largest media company in the Benelux. Snowflake, dbt, Airflow, Qlik Sense, Databus: 50+ developers, ~1,000 internal users, advertising data that goes directly to paying customers.

RESPONSIBILITIES

- Run the multi-tenant Airflow platform on EKS as part of a 3-engineer data platform team
- Own the Qlik Sense infrastructure: HA migration, monitoring, upgrades. Only person on the team with Windows Server knowledge.
- Build LLM-driven analysis tooling for platform optimization (personal initiative, now management-backed)
- Own the technical side of team-by-team Airflow migration: operator compatibility, DAG rewrites, production cutover.

ACHIEVEMENTS

- Led the Conveyor-to-Airflow migration: ~600 DAGs, ~15 teams, ~50 developers. Zero production impact during cutover. Built from scratch after MWAA proved too limited.
- Designed the multi-tenancy model: namespace-per-account with cluster policy hard gates, scoped secret reflection, per-component IAM via Pod Identity, and automated pod reaping for evasion detection.
- Restructured Qlik Sense to high-availability: inherited a legacy system that couldn't keep up with demand. Reduced central node load by 50%. ~2,000 apps, ~1,000 internal users.
- Built LLM-driven analysis platform (personal initiative): analyzes 2,000+ Qlik apps and 500+ Airflow DAGs. PoC to production in 4 weeks, iteratively hardened since. 1,000+ reports generated. Findings range from log ingestion waste to over-provisioned compute to memory patterns invisible to manual review. Projected savings in the tens of thousands per year.
- Built the Qlik observability layer in OpenSearch and Airflow platform monitoring dashboards.
- KEDA-based autoscaling: Spark History Servers and analysis platform scale from zero with sub-5-second cold starts.
- Migrated from deprecated nginx ingress to Istio service mesh: enabling cross-account mTLS, network-level observability, and E2E tracing ahead of the Airflow 3 edge worker migration.
- Contributed upstream to Apache Airflow: task state corruption fix ([#63266](#)) and CloudWatch log cleanup fix ([#62985](#))

Darefore ACTIVE

Garmin ConnectIQ Developer + Firmware Engineer | Jan 2024 – Present | Freelance · Project · Pafos, Cyprus · Remote

SUMMARY

- Build and maintain ConnectIQ apps and Movesense sensor firmware end-to-end for Darefore's running and cycling sensors (heart rate, running form, cycling aerodynamics/CdA). Got the intro through a sports tech blogger. Solo on the firmware side.

RESPONSIBILITIES

- Implement and maintain Garmin ConnectIQ DataField applications
- Write and optimize Movesense sensor firmware in C++
- Field-test hardware and software on the bike

ACHIEVEMENTS

- Shipped a sequential dual-BLE-identity trick on the nRF52832: one chip presents as two devices at two MAC addresses, so a Garmin watch pairs it natively as a heart-rate monitor while a Connect IQ datafield reads custom metrics over a separate GATT service, getting past Garmin's refusal to serve both from one peripheral. Documented publicly.
- Reverse-engineered Garmin's undocumented Running Dynamics (GFDI) BLE protocol and built an ESP32 simulator that gets a Garmin watch to show native HR, pace, cadence and full Running Dynamics from non-Garmin hardware (open-sourcing as OpenRD).
- Redesigned the sensor software architecture: custom GATT service moving algorithms from client-side to on-sensor processing. Wrote it in C++ on Movesense, solo, no prior embedded C++ experience.
- Movesense lead engineer and CEO invited me to give product feedback.
- Built BLE competency from a personal side project (GoPro Remote Datafield: protobuf, message fragmentation on 20-byte Garmin BLE messages)

Stryd ACTIVE

Garmin ConnectIQ Developer | Jun 2023 – Present | Freelance · Project · Boulder, CO, USA · Remote

SUMMARY

- Sole developer on Stryd's Garmin datafield. Stryd had an internal developer but couldn't dedicate enough time to continue Garmin work. They reached out after my open-source **RunPowerWorkout** and its community traction: I already had the product knowledge and the community was already using my version. Started as a side engagement while still at AWS. This gig started the freelance career.

RESPONSIBILITIES

- Develop and maintain the Stryd Zones Garmin datafield
- Contribute to backend systems for Garmin-related features

ACHIEVEMENTS

- Rewrote most of the v1 datafield: custom layout system, workout API support, memory optimization across 64K-256K devices. 100K+ downloads, 350+ reviews on the Connect IQ store.
- Started from my open-source **RunPowerWorkout**: took over as #1 contributor, became the de facto Stryd datafield. Stryd reached out based on community adoption.



Online CV

Microoled

Garmin ConnectIQ Developer | Feb 2025 – Feb 2026 | Freelance · Project · Grenoble, France · Remote

SUMMARY

- Implement and maintain the ActiveLook/Engo ConnectIQ datafield for smart cycling/running glasses. Work-package-based: ship a feature, pause, repeat. They only have one ConnectIQ dev, so I step in during rushes.

RESPONSIBILITIES

- Add sub-sport support and baseline workout functionality
- Fix bugs and implement experimental gauge features

ACHIEVEMENTS

- Built CI/CD pipeline for the ConnectIQ codebase: reverse-engineered Garmin's SDK download workflow (no API exists)
- Shipped features and fixed performance issues across 87+ Garmin device targets
- Building an embedded telemetry pipeline under ~2KB memory constraints (unreleased)

Amazon Web Services

Technical Account Manager | Sep 2022 – Oct 2023 | Payroll · Brussels, Belgium · Hybrid

SUMMARY

- Technical point of contact for Enterprise Support AWS customers: architecture reviews, incident support, cost optimization. Learned how AWS actually works under the hood, but missed hands-on engineering: went freelance.

RESPONSIBILITIES

- Architecture reviews, cost optimization, and migration support for large European government institutions
- Incident coordination across customer accounts: DDoS mitigation, key leak remediation, service escalations
- On-site support for large-scale public events including hackathons and program launches
- Monitor customer environments and flag issues before they escalate

ACHIEVEMENTS

- Ran incident response during a DDoS attack on a major live broadcast
- Dug into hard-to-reproduce bugs with a large enterprise customer: worked directly with Seattle service teams until the operational issues were actually fixed
- Credential leak incident for a large customer: coordinated between their SOC and ours. Security background meant I could skip a communication hop and give our security teams what they needed directly.

dataroots

Lead Cloud Engineer | Apr 2020 – Sep 2022 | Payroll · Leuven, Belgium · Hybrid

SUMMARY

- First cloud/DevOps hire at a small data consultancy. Built and led an 8-person cloud team as the company scaled from 25 to 125+ people.

RESPONSIBILITIES

- Led and mentored an 8-person team; ran bi-annual training on Cloud Security and Kubernetes (rootsacademy, content reused after departure)
- Designed and built cloud platforms for clients in finance, government, pharma, and food/beverage
- Troubleshoot and unblocked teams across the company
- Built team culture: internal Strava competition dashboard (22 participants, 3,487 km raised at €1/km for Leuven's Kinderkankerfonds and Pinocchio)

ACHIEVEMENTS

- Puratos: deployed a Kubeflow ML platform. Production output increased 30% (target was 10%). PoC in 2 months vs. planned 6. First for the Puratos Group: AI applied to live microorganism production.
- Finance client: full AzureML data platform from scratch. Year-long engagement, directly with the CIO.
- Finance client: rightsized ML compute with Karpenter on EKS (pre-GA early adopter).
- F&B client: shipped an ML model to production. Inherited a 'works on my machine' app, containerized and deployed on Azure.
- Pharma client: K8s-based data science lab. Year-long engagement. Patterns reused at DPG Media.
- dploy.ai: rebuilt GCP infrastructure for dataroots' AI model deployment PaaS: moved from ad-hoc deploys to git-based with Terraform, proper tagging, and rollback.
- Government client: ML image triage platform for automated evidence reconnaissance.
- Authored 5 open-source Terraform modules and a custom provider in Go. Contributed upstream to HashiCorp's azurearm provider.

Keytrade Bank

DevOps and Cloud Engineer & DevOps Chapter Lead | May 2018 – Apr 2020 | Payroll · Brussels, Belgium · On-site

Built hybrid cloud platform from scratch (EKS + OpenShift) with full IaC, CI/CD pipelines, and auto-injected observability stack. Promoted to Chapter Lead: managed 3 engineers, IT Architecture Board. Platform still running years later.

Bank Degroef-Petercam

Linux/AIX Engineer | Sep 2017 – May 2018 | Payroll · Brussels, Belgium · On-site

Implemented RedHat Satellite patch management (none existed) and Ansible-based deployments. Short stint: scope mismatch, returned to Keytrade for cloud work.

Keytrade Bank

Infrastructure and Security Engineer | Feb 2015 – Sep 2017 | Payroll · Brussels, Belgium · On-site

Built KUMA (in-house RBAC replacing a costly failed vendor: ran 5+ years). Deployed inline threat management, Luna HSM, monitoring for 200 systems across 3 countries.

Cadence (formerly NUMECA International)

System Administrator and Web Developer | Jul 2014 – Feb 2015 | Payroll · Brussels, Belgium · On-site

CFD software company (McLaren F1, Toyota). Internship: C++ work on CFD codebase (X3D exporter, WebSocket server, reverse-engineered binary protocol). Managed ~100 workstations, VMware cluster, HPC. Automated imaging with Ansible, deployed SugarCRM read replica (200ms ~15ms for Asian offices).

TESTIMONIALS

One of those infrastructure/network wizards that can solve in a few minutes what could take hours... never shies away from getting his hands dirty and actually enjoys it.

Gauthier Feuillen
Partner Engineer at Google
Via LinkedIn February 2026

Sam stepped into the role of firmware developer and executed flawlessly... strong embedded systems knowledge, ownership of the full development lifecycle, from debugging low-level issues to ensuring stable production releases.

Marios Kyriakou
CEO & Co-Founder at Darefore
Via LinkedIn February 2026

Probably the only guy I worked with understanding the real meaning of DevOps. Technically brilliant... works fast with quality. More than an excellent colleague, I found a friend.

Nicolas Pepinster
DevOps Chapter Lead at Keytrade Bank
Via LinkedIn March 2020



Online CV

A creative problem solver. Starts from the problem, not the tool. He'll pick up whatever technology or skill is needed and make it work. A true forward deployed engineer: close to the problem, close to the client, focused on delivering.

Bart Smeets
Tech Founder

Via LinkedIn February 2026

Full recommendations at dropbars.be

PROJECTS

OpenRD: Garmin Running Dynamics over BLE <https://codeberg.org/samdumont/openrd-ble-running-dynamics>
Reverse-engineered Garmin's undocumented HRM 600 Bluetooth stack (Multi-Link, GFDI, EventSharing protobuf) so non-Garmin hardware can speak native Running Dynamics. An ESP32 simulator (OpenRD) makes a Fenix 8 show native HR, pace, cadence and full Running Dynamics from invented data, and a Python client reads real RD back out of an HRM 600 with no Garmin watch in the link.

- Broke the protobuf activation wall by decompiling the Garmin Connect Android app (180 generated proto classes) after live probing dead-ended; proved Garmin product identity is not the capability gate, only the protocol is
- Sensor-side Running Dynamics support planned as a PR back to Gadgetbridge; full protocol notes, decoders and ESP32 firmware open-sourced on Codeberg

RKD Telemetry Extractor [sam-dumont/rkd-telemetry-extractor](https://codeberg.org/samdumont/rkd-telemetry-extractor)
Reverse-engineered parser for proprietary Race-Keeper .rkd binary telemetry files. Extracts GPS and IMU data on macOS/Linux.

- Dual Python + Go implementations with identical output
- First public documentation of the RKD binary format: decoded in ~4 hours with Claude Code vs. failed manual attempt in 2021

Data Platform AI Report Generator (DPG Media)
LLM-driven static analysis platform for Qlik Sense apps and Airflow DAGs at DPG Media. Combines LLM analysis with RAG to identify performance issues and generate fixes. Built on personal initiative because 2,000 apps at days each of manual analysis was not going to work.

- Solo project, PoC to production in 4 weeks, using Claude Code/Copilot
- Multi-pass LLM analysis with custom RAG pipeline (HyDE + multi-query RRF). Valkey as L1 cache layer.

RunPowerWorkout [tommyvdz/RunPowerWorkout](https://codeberg.org/tommyvdz/RunPowerWorkout)
A Garmin ConnectIQ datafield to help runners train with Stryd power sensors. The project that started the freelance career.

- Took over and fully rewrote the datafield as the #1 contributor (23 PRs, 2021-2023): custom display engine with 3 layout modes, ANT+ power support for watches without native power meter integration, memory management rewrites for low-memory devices, CI/CD pipeline for automated store publishing
- Expanded device support from a handful of watches to 20+, backwards compatible to CIQ 2.x

Keytrade Cloud Platform (Keytrade: Cloud)
Internal PaaS built from scratch: multi-account AWS landing zone (pre-Control Tower), EKS + OpenShift, Dynatrace APM, Istio service mesh, Gitlab CI/CD. Pre-everything: neither Control Tower nor Transit Gateway existed when we started.

- Started as a 2-person team, grew to 5. I was technical lead. 5 feature teams, 25-30 AWS accounts.
- Account vending with automatic provisioning, SSO integration, SCPs, Aviatrix hub-and-spoke networking, cross-account service mesh.

KUMA (Keytrade: Security)
In-house RBAC and permission management system built with PowerShell and SharePoint. Replaced a costly failed Microsoft FIM implementation by an external vendor. Integrated with Active Directory, Cisco CUCM, internal databases, phone systems, VPN access.

- Full audit trail: historical snapshots of who had which permissions at any point in time. Temporary access flows with manager escalation.
- Became an audit compliance requirement: auditors couldn't go back to being blind

TALKS & PRESENTATIONS

Airflow at Scale on AWS	2024
Data Mineurs Meetup, CETIC	
Predictive Maintenance Demo	2023
AWS Public Sector Symposium Brussels	
State of AI and Data	2022
dataroots Datatrends 2022	
rootsacademy: Cloud & Systems Engineering Track	2020
dataroots	
Infrastructure as Code	2020
dataroots	
Keytrade Monitoring Platform	2019
Dynatrace PerformGo! Benelux	

CERTIFICATES

Winner Security Jam at re:Invent 2020	2020
AWS	
HashiCorp Certified Terraform Associate	2020
Hashicorp	
AWS Certified Solutions Architect - Associate	2020
AWS	
Winner Security Jam at re:Invent 2019	2019
AWS	
EF Standard English Test Certificate	2018
EF	

LANGUAGES

French (Native speaker)
English (Full professional proficiency (C2))

EDUCATION

Haute Ecole de Bruxelles
Bachelor – Computer Science 2011 – 2014

High honours (80%)
Been writing code since age 7: coming back to tech after the photography degree was not a surprise. Networks and telecoms track. Internship at NUMECA led to first job.

Ecole supérieure des arts de l'image, le 75
Bachelor – Visual arts, photography 2007 – 2010

Honours (76%)
What brought me to Brussels, and kept me there. Student council president year 2 (lobbied for large-format printer purchase). More technical than artistic: mastered digital workflows, large-format printing, post-production. Built my PHP portfolio. Wanted to open a printing lab after graduating: did the full Actiris track (business plan, suppliers, market research) before concluding it wasn't viable.

SKILLS

Expert: Airflow · AWS · Docker · Garmin ConnectIQ · Kubernetes · Linux · Solution Architecture · Terraform
Advanced: Ansible · ANT+ · Azure · Bluetooth Low Energy · C++ · Claude Code · Dynatrace · GitHub Actions · GitHub Copilot · Gitlab · Helm · Karpenter · LLM / Prompt Engineering · Movesense · Python · QlikSense · Windows Server
Proficient: Azure DevOps · Azure ML · Bedrock · Datahub · FastAPI · GCP · Go · Grafana · Istio · Jenkins · KEDA · Kubeflow · OpenSearch/ElasticSearch · OpenShift · PowerShell · RAG · Spark · VMware
Familiar: dbt · Protobuf · Snowflake

INTERESTS

DevOps and Agile Cloud Architecture and Engineering IT Security
Software Development Local LLMs

HOBBIES

Dad – raising a little human since 2024
Cycling – road, gravel, Zwift: sub-1h 40K
Running – marathon PR 3:30, 20km de Bruxelles regular
Music nerd – EBM, thrash, pop, no apologies
Domotics – Home Assistant, local-first
Homebrewing – hoppy saison specialist, occasional wildcard



Online CV