

# Miguel Aguirre

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Software engineering contractor with a decade's experience across rail ticketing, low-latency trading analytics and early-stage products. Comfortable digging into unknown systems and data, or picking up whatever a team is missing. Available for contract from November 2026.

## EXPERIENCE

Nov 2025–May 2026 **First International Data Union**, Contract Software Engineer

Primary engineer for FIDU's existing production systems and ongoing product development. FIDU is a non-profit, single-engineer startup, where my work included:

*Operations* Managing the production VPS including first- and third-party software deployed to it and the website hosted on it; configuring and migrating to a new development VPS

*Building* Fixing, refactoring, and adding new features to a React frontend, its Python backend, and various Go backend services; improving security

*Advising* Joining meetings to advise founders on technical costs and plausibility of current projects and long-term suggestions, and the benefits of existing and potential third-party services

Jan 2024–Nov 2025 Career break: travel, off-piste skiing, SCUBA qualifications, 3D printing

Apr 2022–Jan 2024 **G Research**, Software Engineer

Worked in C# on the Fast Path Execution team within Low Latency Engineering to improve and measure the speed and quality of reactions to market data. Primarily used Python and Trino to investigate, clean, and surface existing raw data into helpful formats and reusable queries for the team, quants, and management.

*Management dashboards* Created a daily aggregator of business-critical metrics from HDFS into Postgres and surfaced this to management on Tableau. Caught an issue with a major deployment in its first week in production.

*Quant dashboards* Automated previously-manual quant work to aggregate data for choosing simulation parameters. Validated and cleansed data selection and surfaced via plotly graphs on streamlit. Highlighted mismatches between real world metrics and simulation parameters.

*Ad-hoc investigations*

- Automated search of timeseries anomalies indicating an infrastructure failure in order to quantify and monitor the failure using `match_recognize`.
- In-depth analysis of changes in latency profiles seen across the system due to experimental changes by other teams, in order to help them quantify improvements.

Left due to reorganisation affecting approximately one third of the department.

Oct 2015–Feb 2022     **iBlocks Ltd (Tracsis Plc)**, Senior Software Engineer (joined as Graduate)

*smartTIS* An account-based ticketing post-pay system which sells each customer the cheapest tickets for their journeys each day by processing rail station gateway and bus taps. Working in a team of 6 developers using Scrum. My role included oversight and onboarding of other team members.

- Spearheaded migration from hand-configured infrastructure to CloudFormation stacks with Python deployment scripts
- Profiled and optimised memory usage and load speed of reference data in batch processes through change of data structures and bit-packing mixed type data into integer values
- Critiqued and implemented a redesign of pay-as-you-go ticket sales to a modular system which more easily allows integration of regional ticketing (e.g. Oyster, Metrolink)
- Migrated Jenkins CI to AWS Elastic Kubernetes Service, with auto-scaling workers and automated steps to start replacement or development clusters

*ORCATS* Simulation of potential customer movements across the rail network to automate allocation factors for revenue sharing between Train Operating Companies. Discovery of existing system written in COBOL and PL/I, a prototype replacement written in Java SE, and a web page to visualise the differences. Team of 2.

## TECH STACK

|               |                                                                              |
|---------------|------------------------------------------------------------------------------|
| Languages     | Python, Java, Go, TypeScript, C#, Bash                                       |
| Data          | pandas, numpy, Trino, HDFS, PostgreSQL, MySQL, Prometheus                    |
| AWS           | CloudFormation, Lambda, S3, EC2, Step Functions, CloudFront, Route 53        |
| Ops           | Kubernetes, Jenkins, ArgoCD, systemd                                         |
| Visualisation | streamlit, plotly, matplotlib, Grafana, D3, Leaflet, React, Angular, Tableau |

**EDUCATION**     **Computer Science MEng (Hons)**, 2:1, University of Warwick, 2011–2015

**HOBBIES**     Climbing, skiing, board games