

Edward Laurence

Head of Data · Engineering Lead — AI, Data & Software

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AI & ML

Python Scikit-learn
TensorFlow NLP Neo4j
LiteLLM Modal

DATA ENGINEERING

Pandas Spark Snowflake
BigQuery PostgreSQL

SYSTEMS & EMBEDDED

Matlab Simulink C++

INFRA & TOOLING

GCP AWS Docker Terraform
CI/CD JIRA BitBucket
JavaScript Dart

EDUCATION

MSc Intelligent Systems & Robotics

De Montfort Univ · 2013 · 1st

BEng Aerospace Engineering

RMIT · 2003 · Honours

PG Dip Engineering Management

RMIT · 2004

CERTIFICATIONS & CPD

AI Engineer Core Track

Udemy · LLMs, RAG, QLoRA, Agents

Machine Learning

Stanford University, 2020

IBM Data Science

IBM, 2020

SUMMARY

Aerospace-trained engineer with 20+ years of hands-on technical delivery — 15 years building safety-critical control systems and data tooling at Jaguar Land Rover, followed by a deliberate pivot into AI, ML, and modern data platform engineering. Equally fluent in embedded C++/Matlab and Python/cloud-native stacks. Has led teams and shipped at every level of the stack: firmware, APIs, streaming pipelines, ML models, and full-product hardware/software systems. Strong architectural instincts backed by formal engineering discipline from safety-critical automotive environments.

EXPERIENCE

Independent Projects

2025 – 2026

Self-directed · Melbourne

- Developing Nurcha: a full-stack hardware/software IoT product for automated indoor plant care (Python, C++, Dart, GCP, SolidWorks) — now live across 4 installations with a commercial beta underway
- Extending AI/ML expertise across the modern stack: LLMs, RAG, QLoRA, and agents
- End-to-end project management of two concurrent residential apartment renovations — budget, trades coordination, and delivery to completion

Technical Project Lead

2023 – 2025

Jaguar Land Rover · Melbourne

Python Matlab JavaScript GCP JIRA BitBucket

- Architected and led migration of a business-critical desktop calibration platform from Matlab to Python across **20+ code repositories** — zero disruption to daily engineering workflows
- Redesigned GCP data ingestion to a granular event-driven architecture; cut data availability latency from **24hrs+ to under 10 minutes**, enabling real-time quality oversight for the first time
- Led cross-functional team of **8 engineers** across software, data, and programme disciplines through an 18-month platform migration

Head of Data

2022 – 2023

GetSetup · Remote · Series A online learning startup

Python AWS Apache Spark Metabase Amplitude

- Owned full data stack across ingestion, transformation, and reporting; managed team of **3** engineers
- Architected geolocation-enriched pipeline and connector layer, adding critical business context to analytics dashboards across client-facing teams
- Drove **5x increase** in dashboard delivery throughput through JIRA adoption and engineering process redesign
- Automated client invoicing, eliminating recurring manual-error failures through systematic pipeline tooling

Fractional CTO

2016 – 2019

Jump! Education · Remote · Seed-stage edtech startup

Python Scikit-learn NLP GraphQL Neo4j AWS Docker

- Designed end-to-end platform architecture: API layer, data structures, devops, ML pipelines, and crawling infrastructure from seed stage to production
- Built proprietary NLP-based job and education classification system — core algorithmic engine still powering the platform
- Achieved **52x improvement** in web crawler throughput through parallelisation architecture redesign
- Reduced infrastructure costs by **>50%** through data compression and redundancy optimisation
- Implemented CI/CD toolchain enabling frequent, low-risk deployments and fast failure detection across the full stack

EARLIER EXPERIENCE — JAGUAR LAND ROVER

Consulting Data Scientist

2013 – 2022

Jaguar Land Rover · Melbourne

Python Matlab JavaScript GCP JIRA

- Designed and deployed fully-automated data processing and reporting pipelines covering fleet and rig-based transmission shift events for engineering quality oversight
- Defined and implemented a modular app framework for component reuse across a growing developer team — reduced duplication, improved maintainability and delivery velocity
- Built simulation tooling that materially reduced dependence on expensive prototype vehicles for calibration and testing tasks
- Led migration to agile development methodologies; formed a cohesive engineering team structure as headcount scaled

Hybrid Control Systems Consultant

2010 – 2013

Jaguar Land Rover · Melbourne

Matlab Simulink DOORS

- Designed torque coordination and driveability functions for seamless dual-powerplant integration in hybrid vehicles — production-deployed safety-critical code
- Maintained formal software requirements and externally audited change logs under strict version control for safety-critical systems
- Automated objective peer review processes, improving validation speed and consistency across the engineering team

Transmission Software Consultant

2008 – 2010

Jaguar Land Rover · Melbourne

Matlab Simulink dSpace

- Developed control algorithms using signal processing, neural networks, fuzzy logic, and genetic optimisation — validated on HIL (dSpace) and vehicle environments
- Designed and deployed standalone Windows calibration tools and CAN/LIN signal manipulation units across the engineering team

Software & Controls Engineer

2004 – 2008

Various · Driveability & Software Engineering

- Early career roles in driveability and software engineering — built foundational skills in control systems, algorithm development, and embedded software for automotive applications

PERSONAL PROJECTS

Nurcha — Automated Indoor Plant Care

Python C++ Dart GCP SolidWorks

Full-stack hardware/software product built end-to-end: custom hardware unit designed in SolidWorks, C++ firmware with OTA updates, Dart mobile and web management apps, and GCP analytics dashboarding.

3 residential apartment installations · 1 event plant hire company in beta

Solar-Powered Electric Trail Bike

Matlab SolidWorks

Designed and built an electric dirtbike on a 2008 Honda CRF450 frame — powertrain, battery, and control systems. Field-validated on research trips to Morocco and South America.

Onceover — Used Car Inspection Guide

Typeform Wix

Web app guiding non-expert buyers through condition checks for 300+ popular second-hand cars in Australia. Full content and decision logic authored and maintained independently.

MoleMonitor — Skin Lesion Tracker

XCode VSCode

iOS app for photographing, tracking, and monitoring skin lesions over time, with structured history reporting for medical professionals. Solo-built from design through App Store submission.

ProtoBlox — Development Toolbox for PIC Processors

MATLAB Simulink C

Consumer web app guiding buyers through condition checks for 300+ second-hand cars. Democratising mechanical knowledge for non-experts.

Sold 100+ licenses