ANDREW HOWARD–FERNANDO

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Education

University

Electronics and Electrical Engineering (MEng) 2:1

Bristol University
06/2002

Secondary School

3 A–Levels
10 GCSEs

John Fisher Boys School

Interests

- DIY
- Gardening
- Karting
- Football
- Electronics
- Artificial Intelligence
- Tinkering – coding, tech

Senior Data Platform Lead | AI-Powered Backend Systems

I build data platforms that power real–world decisions – from geospatial analytics to AI–driven insights

I'm a senior data platform architect with over 10 years of experience designing and delivering scalable, secure, and intelligent backend systems that power real-world decisions - from geospatial analytics to AI-driven agent automation.

My work blends cloud-native engineering, microservices architecture, and LangGraph-based AI-assisted agents to deliver grounded, actionable, and context-aware insights.

I've led the end-to-end development of production-grade backend platforms - from data pipelines and API gateways to secure, role-based integrations - all within regulated, high-impact environments.

Work Experience

Data Platform Lead • IONX Networks (formerly Dense Air)   08/2022 – 12/2025

Built and led the development of a secure, cloud-native data platform that powers real-time decision-making for network operators across the US and UK.

- Designed and delivered FastAPI microservices and async data pipelines - delivering 100% faster data access and 50% reduction in response times.

- Built metadata-driven ETL pipelines that ingest data from 5 disparate sources - cutting processing time by 50% and exposing it via flexible REST APIs.

- Engineered event and alert pipelines that generate Trouble Tickets - accelerating incident resolution by 50% and reducing operational downtime by 20%.

- Implemented full observability (performance, cost, latency) - driving down costs and query latency by 2 orders of magnitude using BigQuery.

- Led secure, role-based API and workflow integrations - supporting 3 international teams with seamless access and auditability.

- Built comprehensive testing frameworks (unit, integration, acceptance) for data services - ensuring reliability and consistency at scale.

- Completed a PoC AI-assisted Analytics agent in both LangGraph and n8n frameworks. The agent benefited from the API-first development strategy and a custom knowledge graph that presented specific APIs as tools, grounding the analysis with tested REST API output.

Senior Backend Engineer • Dense Air   08/2021 – 07/2022

Migrated and modernized a geospatial workload from AWS to GCP, achieving massive cost and performance gains - and laid the foundation for scalable, future-proof analytics.

- Led a 6-month AWS-to-GCP migration of a geospatial workload - cutting monthly analysis costs by 500% and improving query latency by 200%.

- Designed and implemented BigQuery-based geospatial analysis - replacing legacy on-premises and VM-based systems with scalable, cost-efficient cloud solutions.

- Built ETL pipelines to ingest, curate, and present OSS data from Network Management Systems - enabling real-time, domain-aware insights.

- Ensured end-to-end data integrity and traceability through metadata and data lineage patterns.

Software Developer • Agrimetrics Ltd   11/2017 – 08/2021

Built a geospatial analytics system that transformed weather data into actionable insights - driving adoption and enabling data-driven decisions in the agritech space.

- Delivered ETL pipelines and Elasticsearch clusters (~1.5TB) to process geospatial and weather data - improving processing efficiency and enabling faster insights.

- Built REST/GraphQL APIs and PowerBI dashboards - boosting client adoption and analytics delivery.

- Developed an internally built ontology to link data assets and generate geospatial and temporal insights about UK fields - enabling smarter, data-rich decisions.

- Integrated daily weather forecasts and observations into a real-time decision engine - providing actionable, domain-specific insights to the agritech industry.

- Contributed to a React frontend for the Data Catalogue and various client-specific web applications.

Software Engineer / Team Lead   01/2003 – 11/2017

I began as a junior engineer at Diagnos.co.uk, rapidly progressing to become the SME for an in-house scripting language. I then oversaw the expansion of the business's data assets and diagnostic capabilities - being promoted to a team lead where I built foundational tools that improved accuracy, reduced data latency, and enabled real-time decision-making for the VAG diagnostic tool.

- SME for an in-house scripting language - enabling complex processes previously not possible.

- As VAG team lead, I designed, developed, and managed the entire lifecycle of a world-leading diagnostic tool - rivalling dealer-grade tools and delivering evolving solutions to meet customer needs.

- Led a team of six engineers in rapidly expanding the business's data assets - implementing OCR/image processing tooling and achieving a 65% improvement in diagnostic accuracy - reducing data input TTL from days to hours.

- Built a bespoke logging and event tracker for vehicle mechanics during solo drive-cycle testing - providing a powerful debugging capability that reduced garage operational costs.

- Ensured ISO9001 compliance and advanced toward ISO27001 - maintaining quality standards throughout product evolution and training delivery.

Leadership & Management

- Mentored and coached up to 6 engineers across 3 startups, conducting regular 121s and performance reviews.

- Actively participated in code reviews, pair programming, and technical workshops to drive quality, ownership, and engineering excellence holding training workshops for the development team.

- Managed delivery of key business initiatives, including cost reduction, platform scalability, and AI integration roadmaps.

- Performed regular cost analysis of cloud resources (GCP), delivering ~10% monthly cost reductions over 3 years.

- Reviewed GCP service offerings to plan migration of bespoke tools to off-the-shelf solutions - improving maintainability and reducing long-term costs.

- Led internal and external stakeholder interactions - presenting architectural designs and roadmaps to align with business outcomes.

- Served as lead developer in 3 early-stage startups, turning technical requirements into scalable, real-world outcomes.