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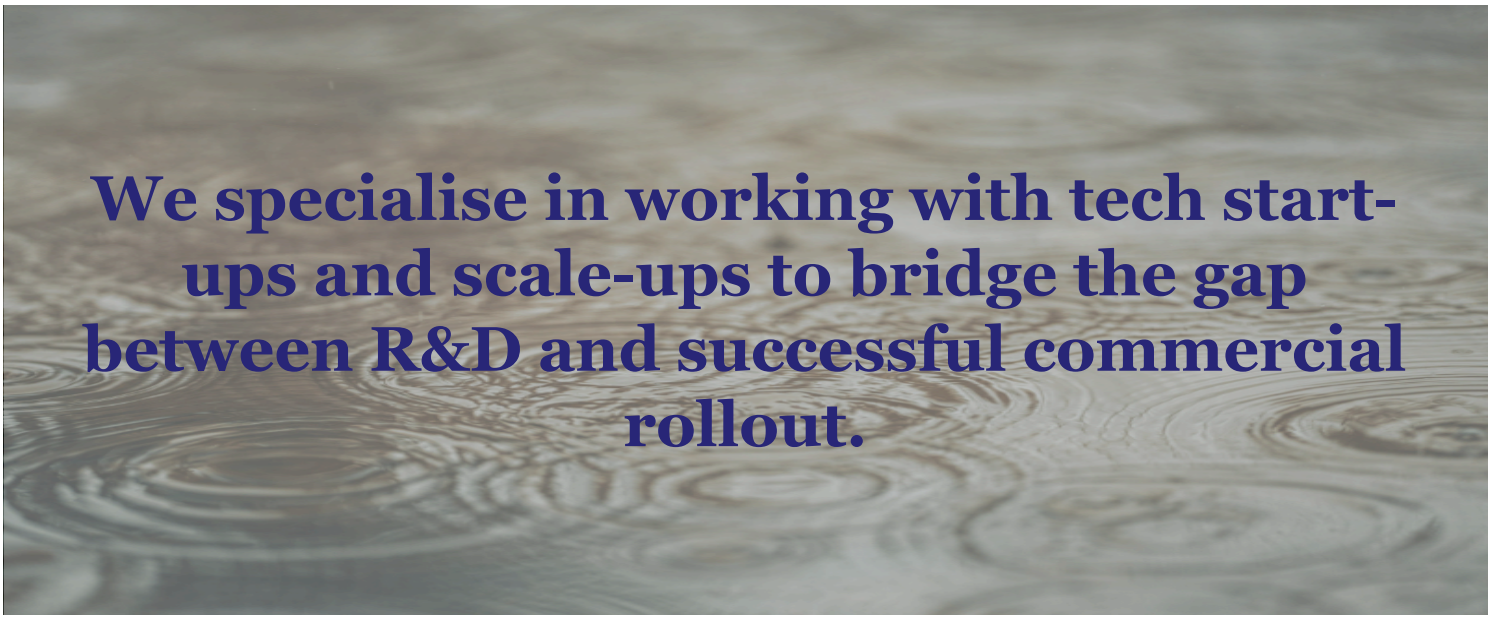

Our Services

- Exploratory Data Analysis
- Data Engineering
- Operational Tools
- Machine Learning & ML Ops
- Concise Reporting

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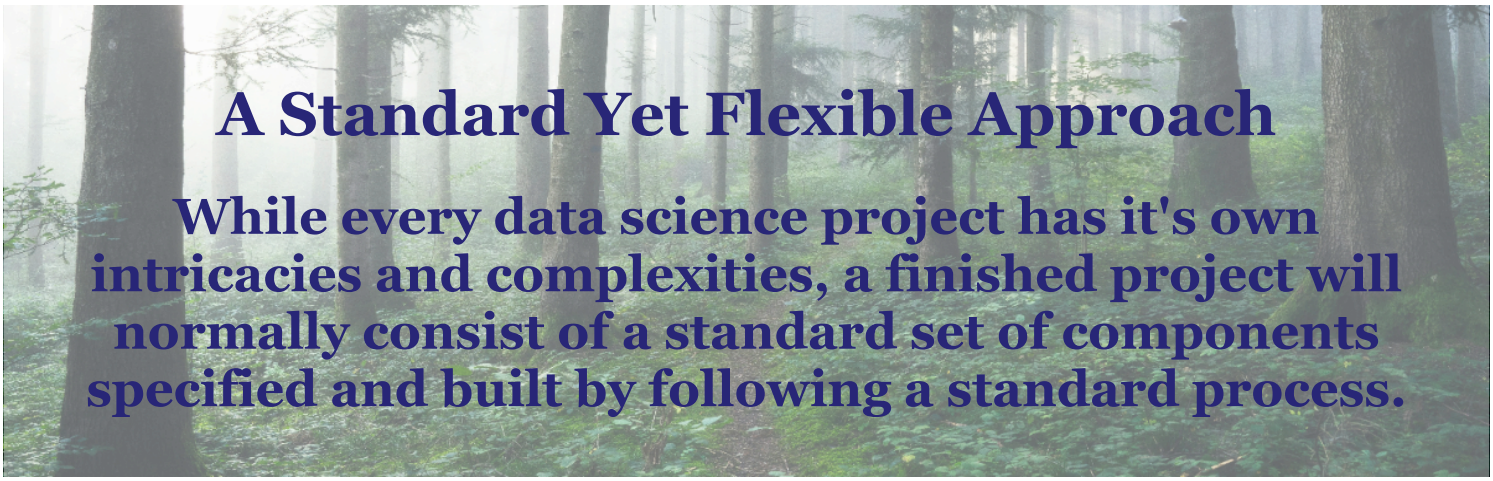

A Standard Yet Flexible Approach

While every data science project has it's own intricacies and complexities, a finished project will normally consist of a standard set of components specified and built by following a standard process.

- **Exploratory Analysis** is the essential first step in any data science project. It involves figuring out how to transform raw data into valuable outputs, such as insights, dashboards, tools and machine learning models, through rapid iterative collaboration. The goal is to convert an initial business specification into real working products without rushing into over-engineered solutions.

- If results from the exploratory need to be easily accessible and updated regularly, **Data Engineering** is required to formalises and scale the process.

- Projects tasked with generating actionable insights require exploratory outputs to be refined and condensed in order to provide **Concise Reporting**.

- During the exploratory process many useful ways of looking at the data will be uncovered. These can be packaged as **Operational Tools** and provided to business users in order to streamline internal workflows.

- When the goal of a project is to produce a deployable **Machine Learning** model, additional work will be required to optimise an initial model. Deployed models will need to be monitored, and new models deployed as part of an ongoing **MLOps** process.

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Exploratory Analysis

Our Core Principle

We believe that exploratory data analysis is the core of modern data science. Whether you are looking to provide deep insights, predictive models, monitoring and alerting solutions or data-driven tools for operational staff, an ability to understand and clearly represent the business through the data is critical.

Our Unique Approach

We take an exploratory and collaborative approach to data science, working closely with you, the expert, to understand and represent your business and products through the data they generate. By building a strong foundational understanding, valuable insights naturally emerge with the use of the right tools and processes.

The Right Way To Approach A Data Project

We like to start our data projects by working with you to identify the value in your data. We take a bottom up approach, working with your teams to build valuable data products. Only once these data products have proven their worth do we move onto engineering and automation. Compare this to an engineering led approach where everything is specified up-front and no value is proven until the end of a project.

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Concise Reporting

Understanding

At Evenlode Analytics we specialise in the transformation of raw data into meaningful insights. We strike a careful balance between presenting facts and statistics, and explaining the processes involved in their generation and quantifying uncertainty around any reported statistic.

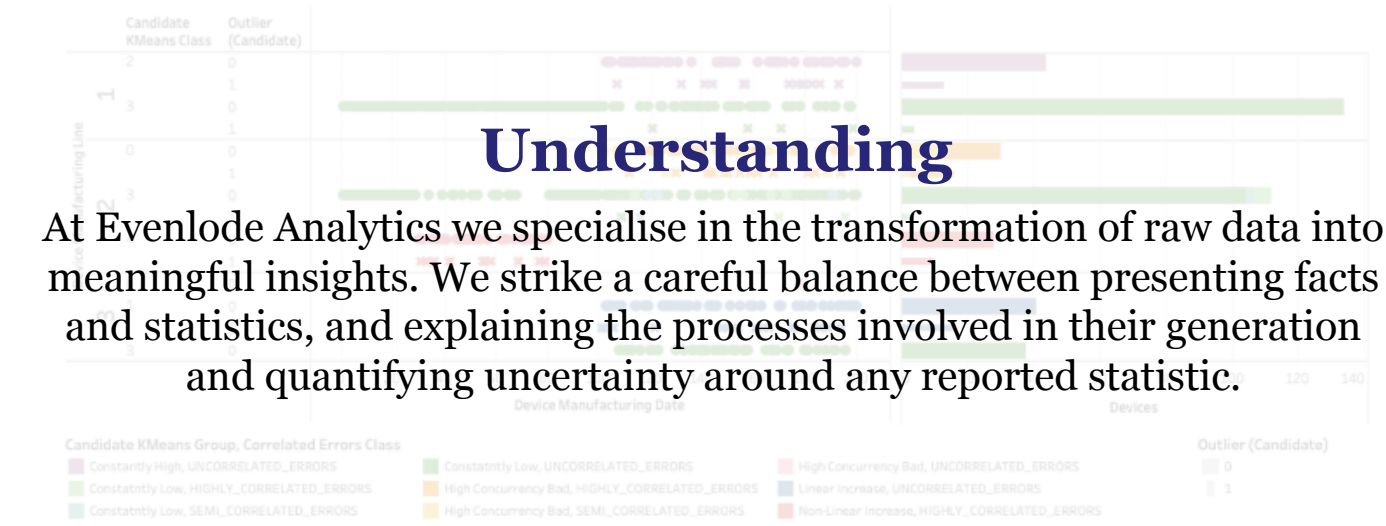

Fig. 1) Product failure mode by manufacturing line

Note - outliers may indicate missing failure mode classifications

Experience

We have extensive experience in producing a wide range of reporting packs, from high-level summaries for C-Suite and board members to detailed debug reports for research scientists, and everything in between.

Fig. 2) Device error rate by manufacturing line and failure mode class

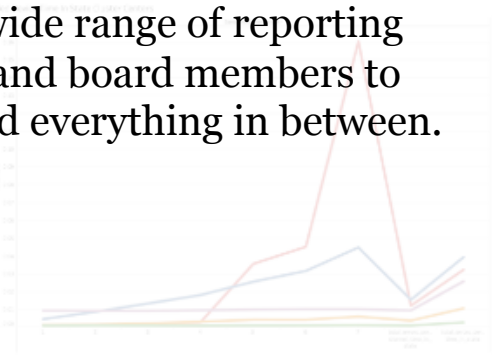

Fig. 3) Device-Concurrency error rate by failure mode class

Mindset

Data is rarely straightforward, upstream systems change and previously unexpected data becomes common. Even well-tested reports will require maintenance and users often need explanations. We understand the importance of supporting your user-facing reports with additional granular breakdowns and robust data quality controls.

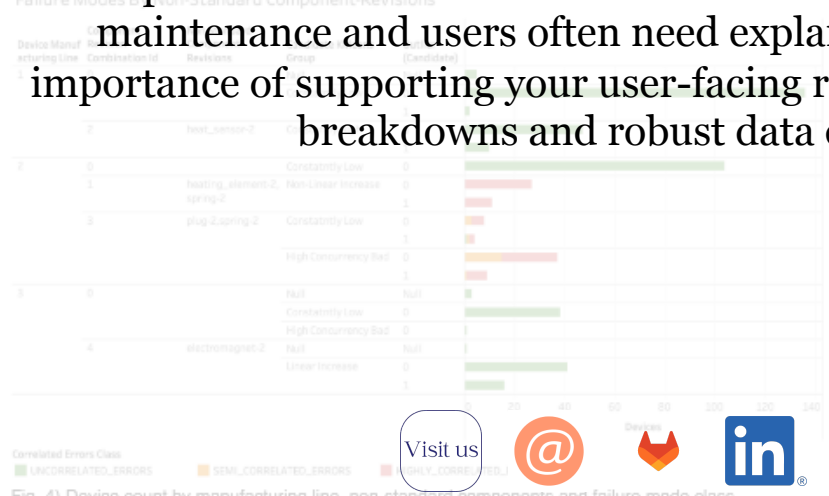

Fig. 4) Device count by manufacturing line, non-standard components and failure mode class

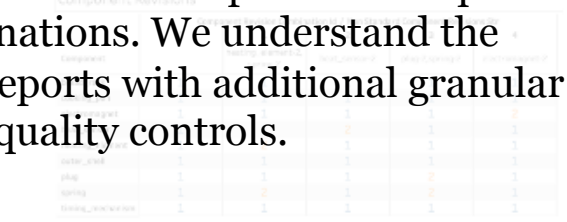

Fig. 5) Component-Revision combinations

Fig. 6) Non-Standard combinations and associated Failure Modes

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Operational Tools

The Right Data In The Right Place

One of our core specialisations is the development and deployment of data-driven tools for operational staff. To keep your business running efficiently, it's critical to get the right data into the right hands at the right time. Whether you are managing a complex manufacturing process, overseeing client-facing support teams, or providing bespoke insights for your sales people, we have the experience to meet your requirements.

A Perfect Match

Our exploratory and collaborative approach naturally uncovers effective ways to present your data to your staff. Our focus on rapid iteration and collaboration creates the tools that are tailored to your company's needs, while our lightweight deployment ensures new tools get to your staff quickly.

A Practical Example

Imagine your company has developed and deployed a fleet of edge devices that send data back to a central database. The following departments have a requirement to see data for individual devices:

- **Technical Support** teams investigating customer issues.
- **Development Engineers** monitoring the performance of a modified devices.
- **Sales Representatives** seeking to understand a customers experience before a call.

A Tableau-based example can be found here .

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Data Engineering

Our Engineering Philosophy

We prioritise practical, efficient solutions, avoiding over-engineered initial deployments and deliveries. To support this, we have developed a lightweight, flexible, and platform-agnostic analysis environment designed for the rapid deployment of engineered solutions.

Proving Value Before Engineering

Our philosophy is to deliver value at every stage of the project. Once we uncover the potential in your data, we solidify and automate the processing and delivery of the required insights.

Beyond Linear Data Pipelines

While we are extremely experienced in building robust and scalable data pipelines, our software engineering expertise allow us create any bespoke software required. Examples include frameworks for running data-driven alerts and automated change point detection.

run_id	pipeline_name	start_time	end_time	time_seconds
5e73666b-fa9a-4872-8f9a-f733b6804198	primary_pipeline	2025-07-23 15:52:16	2025-07-23 15:57:36	320.059459

step_name	step_number	start_time	run_id	end_time	success	time_seconds
Get data from SQL db.	1	2025-07-23 15:52:16	5e73666b-fa9a-4872-8f9a-f733b6804198	2025-07-23 15:52:18	1	2.370942
Annotate raw activity series data.	2	2025-07-23 15:52:18	5e73666b-fa9a-4872-8f9a-f733b6804198	2025-07-23 15:52:18	1	0.233389
Write annotated channel activity series data to ...	3	2025-07-23 15:52:18	5e73666b-fa9a-4872-8f9a-f733b6804198	2025-07-23 15:52:34	1	15.294082
Aggregate channel activity to device activity.	4	2025-07-23 15:52:34	5e73666b-fa9a-4872-8f9a-f733b6804198	2025-07-23 15:53:44	1	69.929494
Write annotated device activity series data to S...	5	2025-07-23 15:53:44	5e73666b-fa9a-4872-8f9a-f733b6804198	2025-07-23 15:53:57	1	13.36898
Process errors data to device error series, devic...	6	2025-07-23 15:53:57	5e73666b-fa9a-4872-8f9a-f733b6804198	2025-07-23 15:54:02	1	5.202052
Write device error series data, device correlated...	7	2025-07-23 15:54:02	5e73666b-fa9a-4872-8f9a-f733b6804198	2025-07-23 15:54:04	1	1.400901
Compress error zones.	8	2025-07-23 15:54:04	5e73666b-fa9a-4872-8f9a-f733b6804198	2025-07-23 15:57:14	1	190.37938
Write device activity series with compressed err...	9	2025-07-23 15:57:14	5e73666b-fa9a-4872-8f9a-f733b6804198	2025-07-23 15:57:35	1	20.527663
Classify devices.	10	2025-07-23 15:57:35	5e73666b-fa9a-4872-8f9a-f733b6804198	2025-07-23 15:57:35	1	0.761857
Write clustered device data to SQL.	11	2025-07-23 15:57:35	5e73666b-fa9a-4872-8f9a-f733b6804198	2025-07-23 15:57:35	1	0.100551
Calculate time in concurrency state.	12	2025-07-23 15:57:35	5e73666b-fa9a-4872-8f9a-f733b6804198	2025-07-23 15:57:36	1	0.146732
Write time in concurrency state data to SQL.	13	2025-07-23 15:57:36	5e73666b-fa9a-4872-8f9a-f733b6804198	2025-07-23 15:57:36	1	0.280201

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Machine Learning & ML-Ops

Bespoke Models For Bespoke Products

At Evenlode Analytics, we leverage Machine Learning to support modelling complex systems and provide a greater understanding of how your business and products operate.
Our approach focuses on lightweight, interpretable models with a particular emphasis on unsupervised methods and time-series analysis.

ML-Ops As Analytics

We go beyond standard, out-of-the-box metrics in order to provide a rich view of your models' performance, blind spots, and evolution. Treating every ML model as a unique product means we tailor our monitoring and analysis to its specific goals, challenges and context.

Seeing The Bigger Picture

While critical, a machine learning model is just one component of a larger data platform. We provide full stack solutions and can deliver both specialised machine learning services and/or the upstream and downstream pipelines built around your model. Our expertise in MLOps allows us to deliver seamless re-training, monitoring, and deployment of models.

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Previous Work

At Evenlode Analytics, we operate across the whole data science project lifecycle.
Below are a sample of projects previously completed by our team:

Analysis

Data Integration & Visualisation (here)
Failure Mode Classification & Regression Tests (here)
Data Quality From Edge Devices (here)
Change Point Detection (here)

Engineering

Flexible Analysis Execution & Storage Platform (here)
Data Driven Alerting System (here)

Transformation

Building a Data Platform for the Analysis of Edge Devices (here)