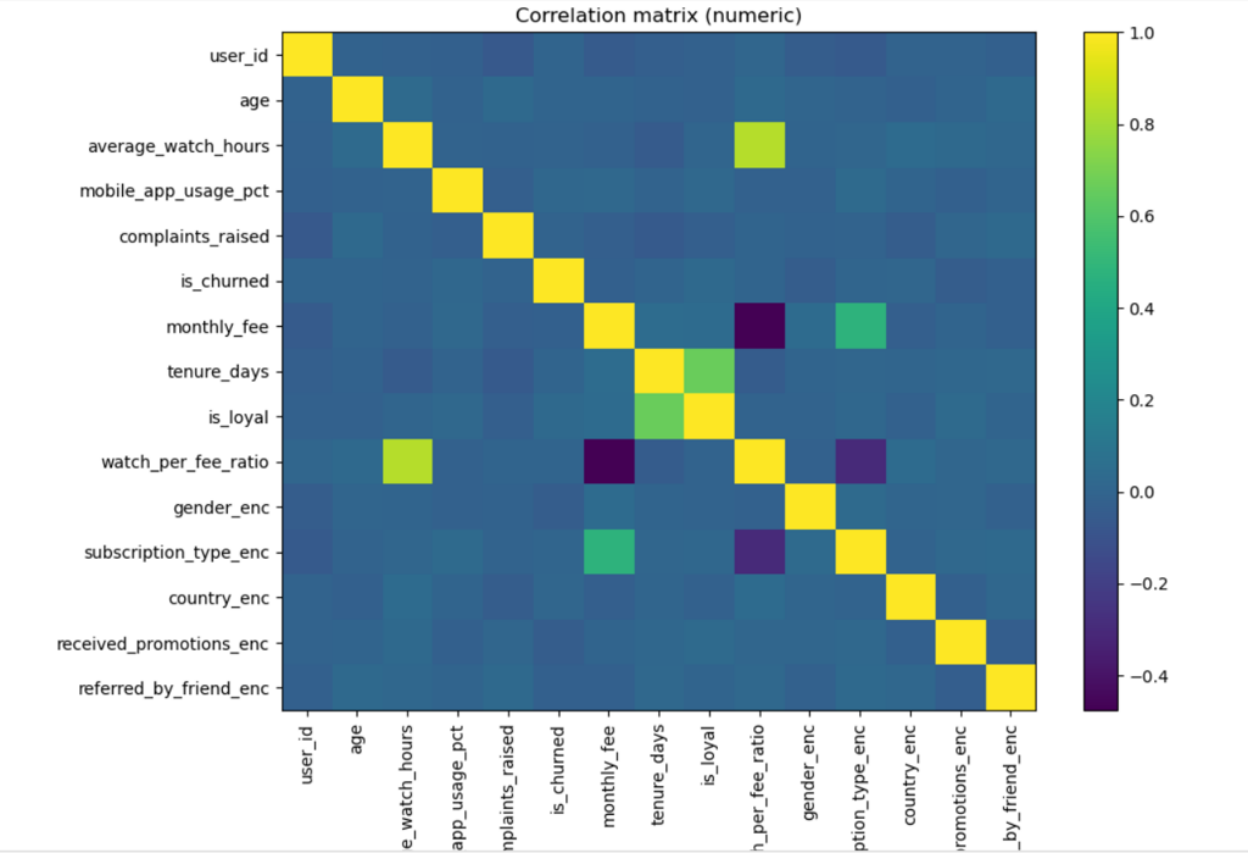
Statistical Analysis

Correlation Analysis Between User Behaviour Metrics



The correlation matrix highlights relationships between engagement metrics such as watch time, tenure, promotions, and churn, helping identify features most associated with customer retention.

What it supports later in the report

- Feature Engineering, why certain variables were kept
- Model Results: Why some features appear as top predictors
- Business Questions, especially watch time vs churn

Correlation Analysis Between User Behaviour Metrics

(Add correlation matrix heatmap image here)

This correlation analysis examines how key numeric variables relate to one another, including watch time, tenure, subscription fee, age, and churn status. The goal is to understand which user behaviours co-occur and which factors are most strongly associated with customer churn.

The analysis shows that **watch time and tenure are strongly positively correlated**, meaning users who stay longer on the platform tend to consume more content. There is also a **negative relationship between watch time and churn**, indicating that users who watch less content are more likely to cancel their subscription.

Subscription fee shows a weaker relationship with churn, suggesting price alone is not the primary driver of cancellation. Age has minimal correlation with churn, indicating that churn behaviour is more influenced by engagement patterns than demographics.

This correlation analysis informed feature selection for modelling by highlighting **engagement metrics as stronger churn indicators than demographic attributes**.

How This Supports Business Decisions

- Engagement behaviour, especially watch time, is a key signal of churn risk
- Early drops in usage can be used to trigger retention actions
- Demographic targeting alone is less effective than behaviour-based interventions