



Netflix Content Intelligence Platform

Transforming entertainment data into strategic insights for industry professionals.

Deployed Version : <https://netflixanalytics452.streamlit.app/>



Project Overview: Data-Driven Decisions

The Netflix Content Intelligence Platform is a comprehensive, data-driven analytics dashboard designed for entertainment industry professionals, content strategists, and business decision-makers. It transforms raw entertainment data into strategic insights through advanced visualizations, statistical analysis, and machine learning predictions.

The Complete Analytical Journey

Our platform guides users through a comprehensive analytical journey, with each dashboard progressively building towards informed investment decisions. This journey, spanning over 6,000 movie and TV show titles, begins with market exploration and culminates in strategic investment choices. All data is dynamically sourced via live feeds from The Movie Database (TMDB) API, guaranteeing the most current and actionable insights.

1 EXPLORE

What content exists in the market?

2 UNDERSTAND

What patterns drive success?

3 IDENTIFY

Where are the opportunities?

4 PREDICT

Should I invest in this?

5 FORECAST

What will happen next?

6 DECIDE

Which option is better?

Key Features: Six Intelligence Dashboards

Content Universe

Genre distribution, quality vs. popularity, top performers, market composition analysis.

Performance Deep Dive

Correlation analysis, anomaly detection, seasonal patterns, and engagement drivers.

Market Opportunities

Market saturation, 80/20 distribution, optimal release timing by genre.

Recommendation Copilot

Popularity forecasts, budget impact, risk assessment, similar title benchmarks.

Predictive Forecasting

Anticipate market conditions 6-12 months ahead for genres and seasonal patterns.

Head-to-Head Comparison

Direct comparison between two options to make final greenlight choices.



Machine Learning Advanced Analytics

Five Production ML Models

- LightGBM Regressor: Popularity Prediction
- XGBoost Regressor: Fallback Popularity Prediction
- Random Forest Classifier: Hit Probability
- Facebook Prophet: 12-Month Trend Prediction
- Isolation Forest: Outlier Identification

These models enable precise forecasts and insights, transforming raw data into actionable intelligence.

Model Details: Predictive Power

LightGBM Regressor

Predicts popularity scores with budget adjustment, utilizing vote average and vote count from genre-filtered datasets.

Random Forest Classifier

Calculates the probability of content becoming a top performer based on engagement metrics and release quarter.

Facebook Prophet

Forecasts 12-month trends per genre, adept at handling non-linear patterns and entertainment industry seasonality.

Isolation Forest

Identifies statistical anomalies and breakout hits using popularity, vote average, vote count, and engagement scores.

Advanced Analytical Techniques



Spearman Correlation

Analyzes monotonic relationships between different data points.



Pareto Analysis

Visualizes the 80/20 rule for content performance and distribution.



Engagement Scoring

Custom composite metric combining popularity and vote metrics for a holistic view.



Market Saturation

Calculates opportunity scoring to identify underserved market segments.



Velocity Calculation

Detects viral spread by analyzing popularity growth rate per day.

Visualization Excellence: 28+ Interactive Charts

The platform provides diverse chart types for distribution, correlation, trend, comparison, forecast, performance, and profile analysis.

- **Chart Analysis Section:**

Explains chart insights and how to interpret them.

- **Interactive Features:**

Hover details, zoom, pan, dynamic filtering.

- **Insight Panels:**

3-4 actionable takeaways with highlighted key metrics.

- **Professional Styling:**

Netflix-inspired dark theme with color-coded genres.

| Category | Chart Types | Purpose |
|--------------|--|--|
| Distribution | Histogram, Box Plot, Pie Chart | Display how data is spread and its frequency. |
| Correlation | Scatter Plot, Bubble Chart | Show relationships and dependencies between variables. |
| Trend | Line Chart, Area Chart | Illustrate changes over time or continuous variables. |
| Comparison | Bar Chart, Column Chart, Radar Chart | Compare values across different categories or groups. |
| Forecast | Line Chart, Candlestick Chart | Predict future values based on historical data. |
| Performance | Gauge Chart, Bullet Chart, Waterfall Chart | Monitor progress, efficiency, and achievement against targets. |
| Profile | Spider Chart, Heatmap | Visualize characteristics or attributes of a subject. |

Business Value & Use Cases



For C-Suite Executives: Strategic Vision & Risk Mitigation

The platform provides C-Suite executives with critical insights to confidently make high-level strategic decisions. It leverages predictive analytics to assess audience demand, identify portfolio gaps, and forecast the financial impact of content investments, minimizing risk and ensuring optimal resource allocation for a higher ROI.



For Content Strategists: Enhanced Performance & Audience Engagement

Content strategists can fine-tune their operations and maximize audience connection through granular performance data. The platform enables optimizing release calendars, tracking emerging trends, and benchmarking content performance to increase subscriber engagement and content utilization.

The platform empowers leaders and strategists to make informed decisions across the entire content lifecycle, from acquisition and production to distribution and audience engagement, ensuring a competitive edge in the evolving media landscape.

What Makes This Platform Unique?

Complete Journey

A full decision-making workflow, not just isolated charts.

Self-Service

No technical skills are needed to extract valuable insights.

A robust, industry-specific solution built for executives and strategists.



ML-Powered

Real predictions with LightGBM, Prophet, and Random Forest.

Massive Scale

6000+ titles via high-performance parallel data fetching.

Actionable Insights

Every chart provides clear guidance on what actions to take.