

## **“Optimizing Netflix with Data Analytics”**

- A 24 hour deep dive by Urja Damodhar

# My 24-Hour Research & Execution

## Problem Statement:

Netflix leverages data to optimize content recommendations, pricing, and user engagement. Challenges: user churn, pricing inefficiencies, and content investment require deeper analysis.

## Outcome:

- Built interactive **Power BI dashboards** to visualize subscription and content performance.
- Designed an **8-stage Netflix Data Pipeline** for real-time and batch processing.
- Analyzed **regional pricing trends and user behavior** to optimize Netflix's revenue strategy.

## Possibilities:

- **Dynamic pricing models** based on real-time user behavior and market trend(Region Specific).
- **Expanding revenue streams** through strategic partnerships and interactive content.

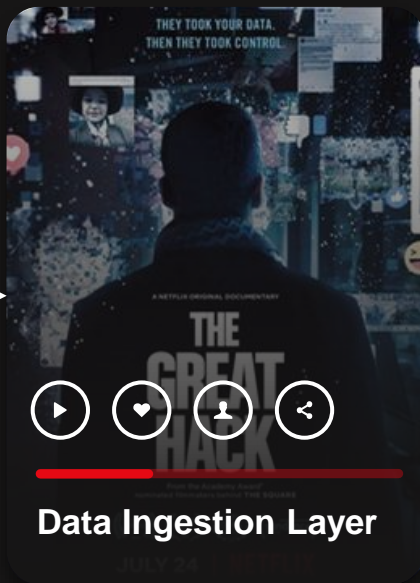


# Data Phase I



## Data Sources

- User Activity Logs
- Subscription & Billing Data
- Content Performance
- Marketing & Customer Support Data
- External APIs (social media mentions, news, competitor data)



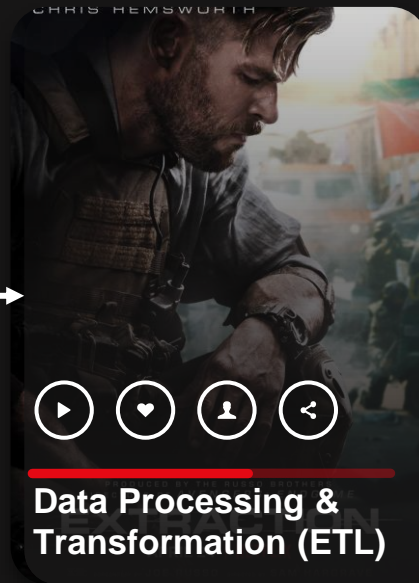
## Data Ingestion Layer

### Streaming (Real-time Analytics)

- Apache Kafka / Kinesis – Captures real-time user interactions.
- Flink / Spark Streaming – Processes data as it arrives.

### Batch Processing (Historical Data)

- AWS S3 / Google Cloud Storage – Stores raw data.
- Airflow / Prefect – Schedules batch data collection.



## Data Processing & Transformation (ETL)

- Apache Spark / Databricks – Processes large datasets efficiently.
- dbt (Data Build Tool) – Applies data modeling & transformations.
- SQL-based Transformations – Cleans, normalizes, and aggregates data.



## Data Storage & Warehousing (Load)

Cloud Data Warehouses for analytical processing:

- Amazon Redshift
- Databricks Delta Lake (for real-time & batch data)

# Data Phase II



**MONEYBALL**

▶ ♥ 👤 ↻

**Data Modeling & Business Intelligence**

- **Star & Snowflake Schema** for analytics-ready data.
- **KPI Metrics:** Monthly revenue, watch time, churn rate, popular genres.
- **BI Tools:** Power BI, Tableau, Looker for **data visualization**.




**MICHAEL LEWIS**

**THE BIG SHORT**

▶ ♥ 👤 ↻

**Machine Learning & Predictive Analytics**

- **User Segmentation & Recommendation Models** using MLflow & TensorFlow.
- **Churn Prediction & Anomaly Detection** with Scikit-Learn & PySpark ML.



FROM THE DIRECTOR OF **SHERLOCK HOLMES** AND **STYCH**

**THE MAN FROM U.N.C.L.E.**

▶ ♥ 👤 ↻

**Live Deployment**

- **Deploy ML models, real-time analytics, & dashboards**
- **CI/CD, MLOps** (Kubeflow, Airflow, Docker, AWS Lambda)



SPACEY WRIGHT MARA STOLL  
MICHAEL KELLY SARINA JAFFREY BRITISH CONNOLLY CONFERENCE ZIMMER MARSDENALI JEREMY ARCELUS

A NETFLIX ORIGINAL SERIES

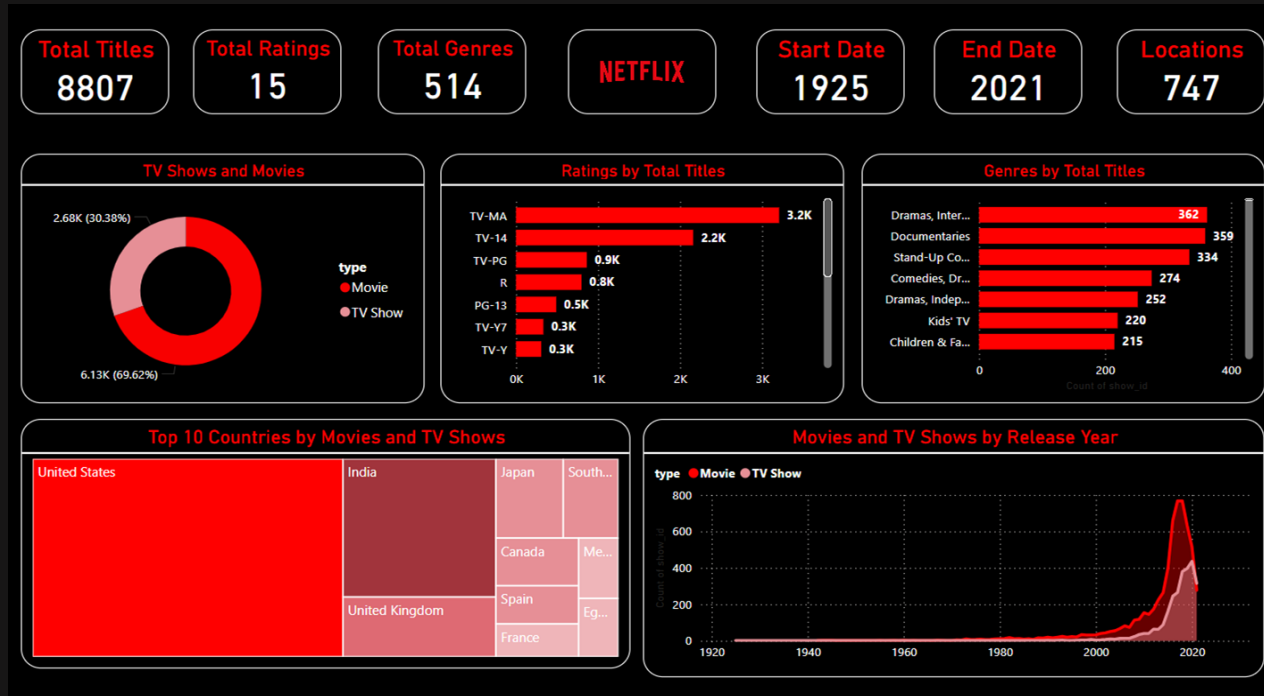
**HOUSE of CARDS**

▶ ♥ 👤 ↻

**Stakeholder Reporting & Feedback**

- **Present insights, receive feedback & optimize models**
- **Executive Dashboards, Reports, A/B Testing**

# Content Dashboard



## 🕒 TOP RATINGS BY TITLES

TV-MA 3.2 K Titles

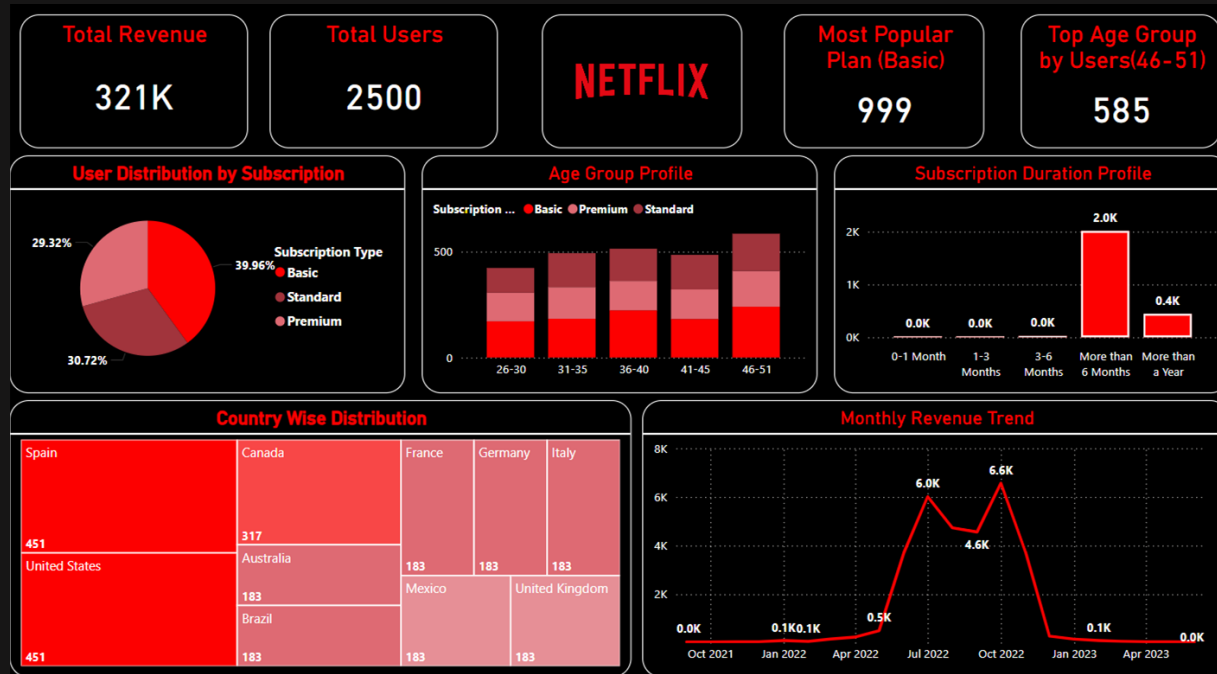
From total of 8.8 K

## 📊 TOP GENRES BY CONTENT

Drama, Documentaries, Stand-Up Comedy

from 1055 Titles

# Subscription & Revenue Dashboard



## 🕒 Total Revenue

\$ 321 K

In 21 months (2500 users)

## 📊 Most Popular Plan

Basic \$10

from 999 Users

# User Base Statistics

## Q3 2024 Report: India VS USA

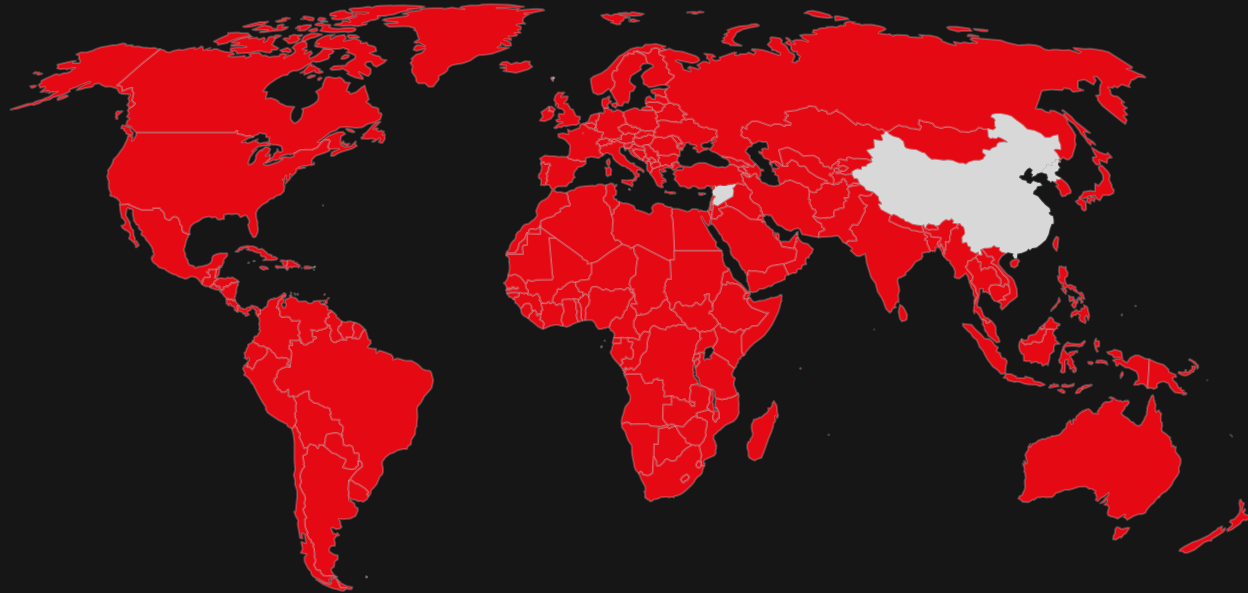
|                   | Mobile        | Basic            | Standard          | Premium            |
|-------------------|---------------|------------------|-------------------|--------------------|
|                   | Only India    | India   USA      | India   USA       | India   USA        |
| Price             | \$2.40        | \$5.75    \$7.99 | \$8.05    \$17.99 | \$11.50    \$17.99 |
| Video Quality     | Good          | Good             | Better            | Best               |
| Resolution        | 480p          | 720p             | 1080p             | 4K HDR             |
| Number of Devices | 1             | 1                | 2                 | 4                  |
| Total Subscribers | 12 Million    | 66.7 Million     |                   |                    |
| Total Revenue     | \$345 Million | \$14 Billion     |                   |                    |



# Key Business Insights & Recommendations

## Recommendations:

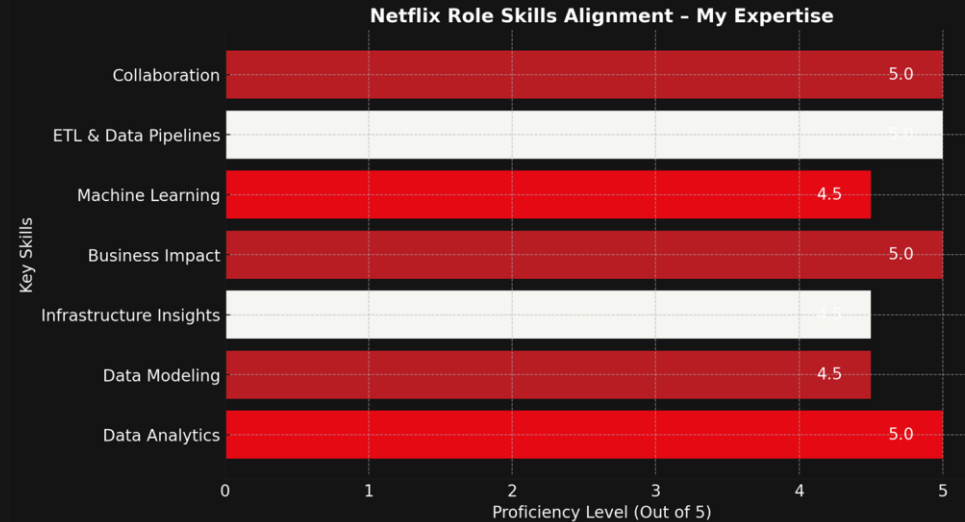
- Focus investment on **high-retention content genres**.
- Optimize pricing based on **regional revenue trends**.  
E.g. Indian User Base VS USA User Base.
- Enhance **personalized recommendations** to boost engagement.
- Use **real-time analytics** to **adjust marketing & content strategies**.





# My Stats

I analyzed Netflix's **Analytics & Data Visualization Engineer** role, mapping my skills to their needs. With expertise in **SQL, Power BI, ML, and AWS**, I build **scalable pipelines, predictive models, and insightful dashboards** to optimize **cost & infrastructure efficiency**.



## 🕒 Highest Qualification

MSc. In Applied Data Analytics

BOSTON  
UNIVERSITY

## 📊 TOP Skills

Data Analytics, Visualization, Business Intelligence

# Sources

## Data

- User Base Data
- Content Data

## Template Credit

- Netflix Template

## Research

- ISPs around Globe for great Viewing Experience
- Data Driven UI-UX Netflix
- Cloud Pivot helps Revenue Boom
- Day in life of Analytics Engineer
- Data And Netflix
- Netflix on AWS

# THANKS

Urja Damodhar | Analytics | Data Visualization Engineer

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