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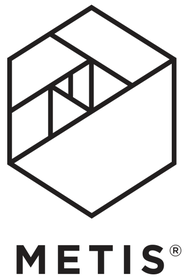
IMDB TV Rating Predictor

METIS Data Science and Machine Learning Bootcamp

by Krystian Krystkowiak, 2022

Introduction

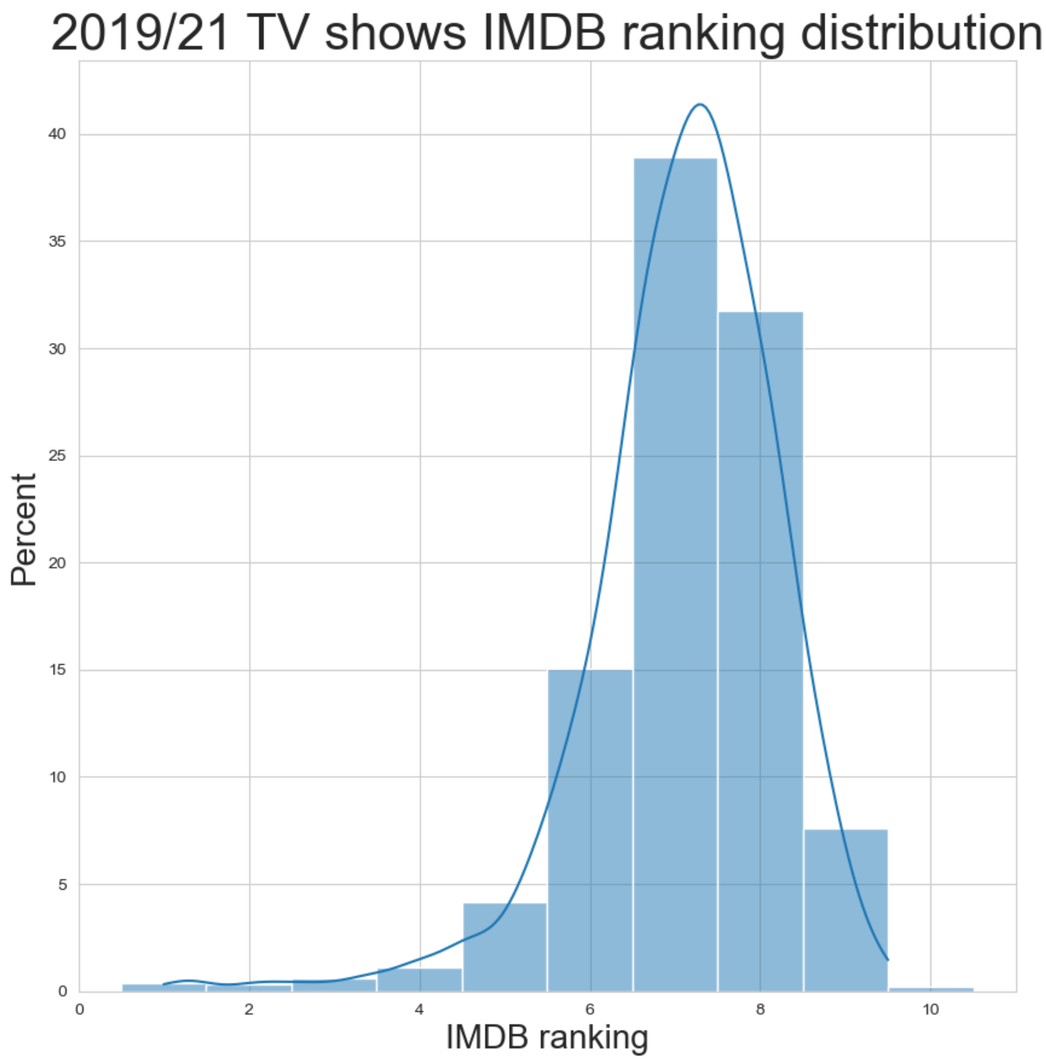


- 2000 - now: **Golden Age of television**
- To create a model that can **predict the reception of a TV show** by viewers.

- GOAL: Identify key **factors that influence a show's success** to help producers during production planning

Data

- **IMDB** data
- Shows from **2019-2021** with **at least 1,000 ratings** selected
- Anonymous scraping
- 1335 TV shows
- Target: IMDB **rating**



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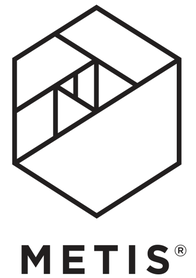
Data

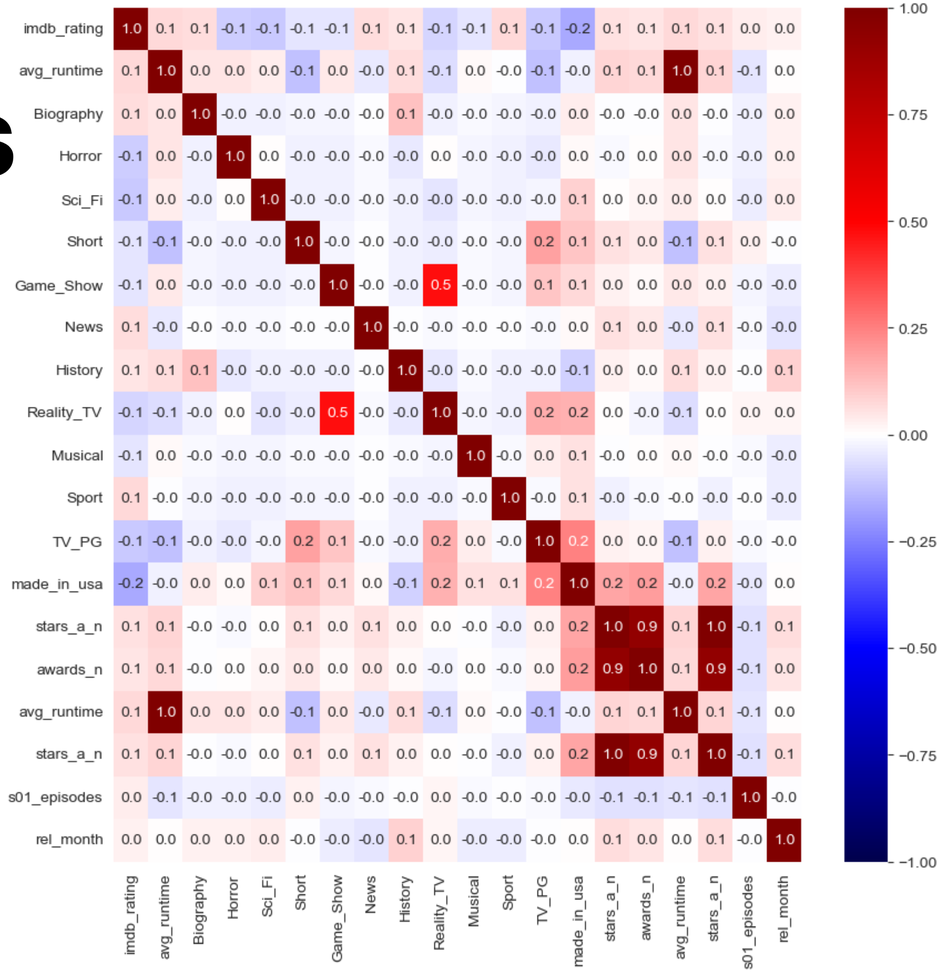


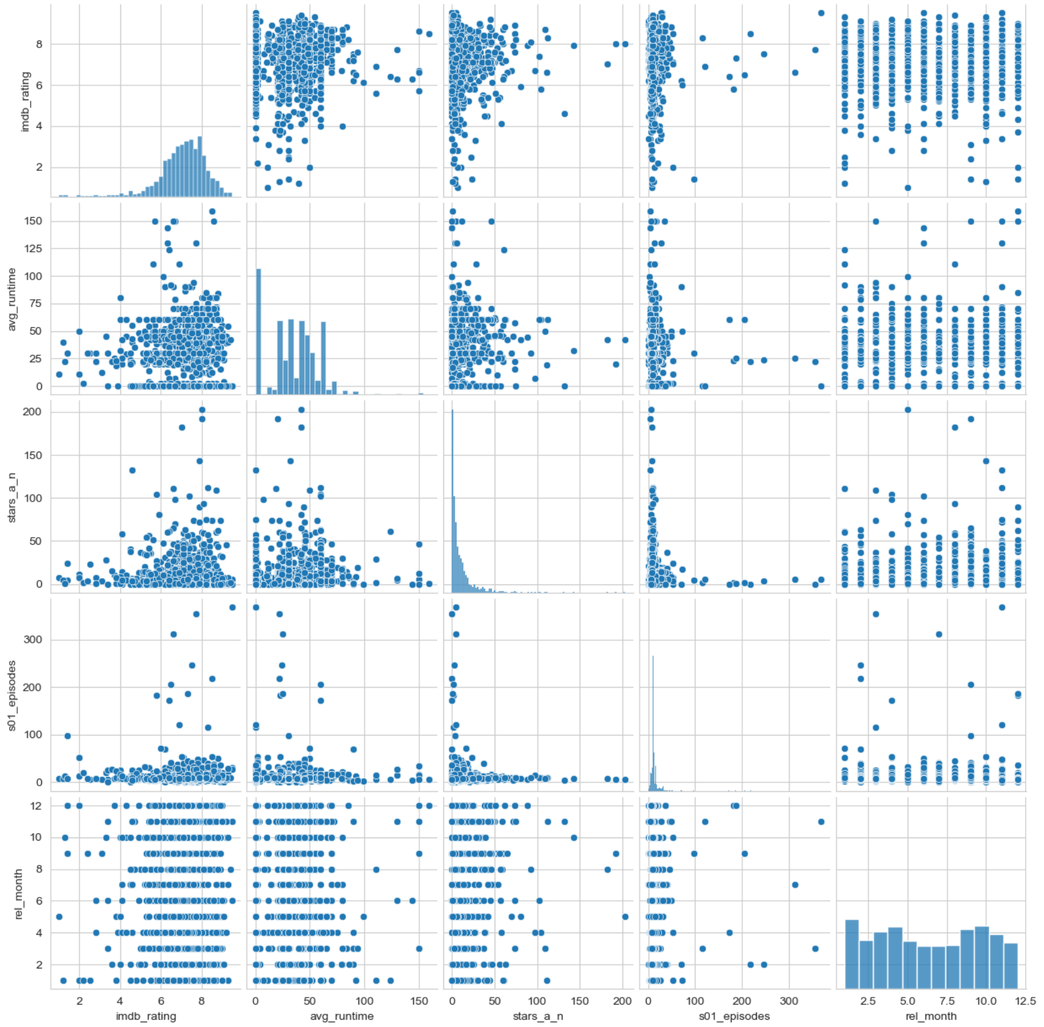
- Features: **11**

imdb_rating	title	s01_episodes	avg_runtime	genres	rel_date	certification	origin	company	creators	creators_a	stars	stars_a
5.8	The Masked Singer	10	60	[Game-Show, Music, Reality-TV]	2019-01-02	TV-PG	United States	[Smart Dog Media, Fox Alternative Entertainmen...	[]	[]	[Jenny McCarthy-Wahlberg, Ken Jeong, Nicole Sc...	[3, 5, 1]
6.2	Siempre Bruja	11	40	[Drama, Fantasy]	2019-01-01	TV-14	Colombia	[Caracol]	[]	[]	[Sofía Araujo Mejía, Angely Gaviria, Sofía Ara...	[0, 0, 0]
6.6	Tidying Up with Marie Kondo	8	40	[Reality-TV]	2019-01-01	TV-PG	United States	[Netflix, The Jackal Group]	[Marie Kondo]	[1]	[Marie Kondo, Charlotte Hervieux, Marie Iida]	[1, 0, 0]

- The dataset consists of a **majority of categorical features**

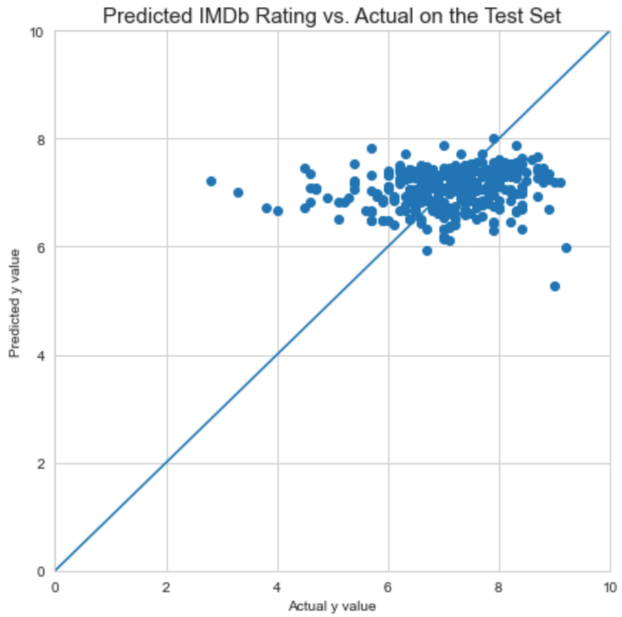
Results

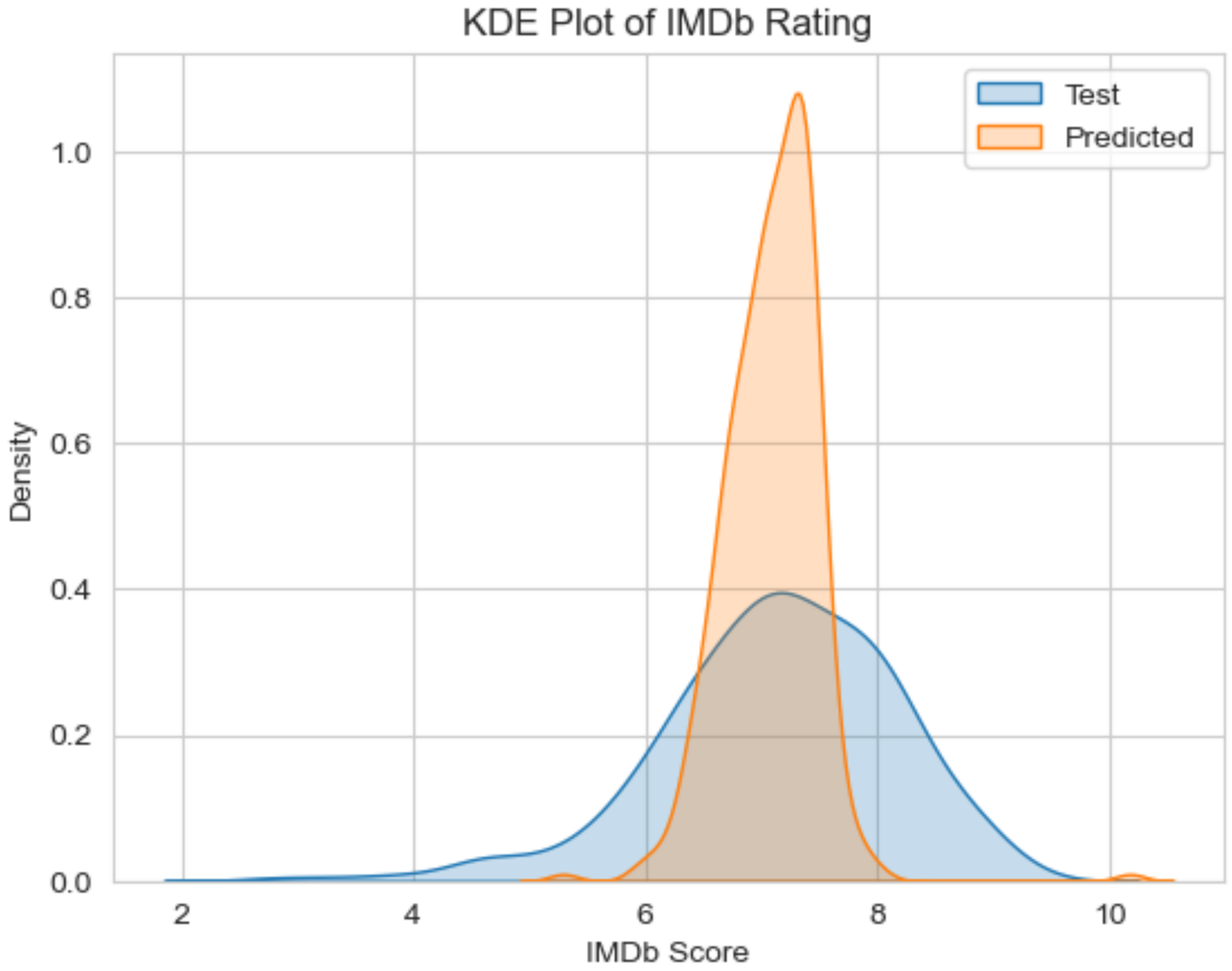




- Features were **not highly correlated** with the target
- **Additional data** scraped. **New features** were engineered (combinations and counters)

Results





- **Linear Regression**
- 75train/25test split
- 0.096/-0.021 R-squared
- Better predictions around median.

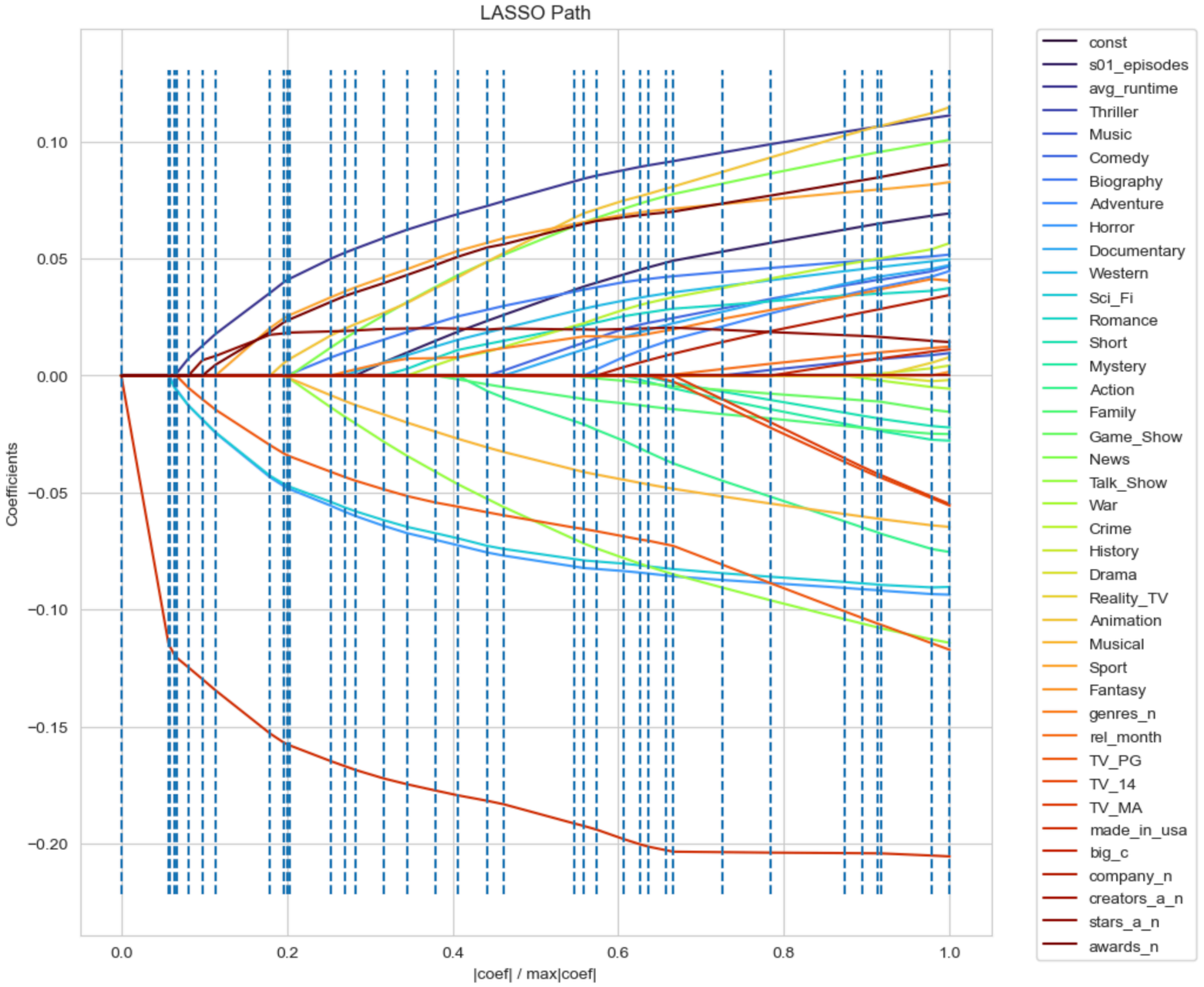
Results

- **Ridge**:

  MAE 0.781, R-squared 0

- **Lasso**:

  MAE 0.782, R-squared -

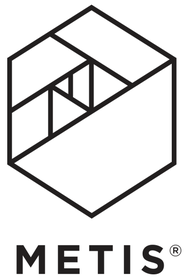


Conclusions

- **Animation** and **news/sport**-related shows with **awarded main cast** tend to be **highly rated**
- **Horror**, **sci-fi**, **talk shows**, **US** productions, and **PG**-rated materials tend to have **lower ratings**

- The world is **complex**
- Features were **not strong** predictors of the target variable

Future Work



- **More data** to improve model accuracy
- Limited information available on TV show budgets compared to movie budgets -> **Twitter NLP**
- Investigate **actors' social media** presence
- Examinine **top TV show** lists to identify common success factors

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Thank you!

Questions?