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Liam-o-meter: 7.4

IMDB: 8.0

the liamometer

using machine learning to simulate opinion

liamisaacs.com/liamometer

22-Jan-2021 (Revised: 31-Mar-2021)

Tito and the Birds

Liam-o-meter: 7.4

IMDB: 6.5

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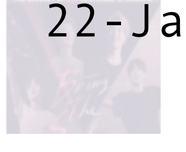
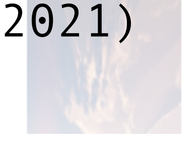




How do we want to rate movies?

How do we want to rate movies?

Active choice
we make off
of
preferences

Can we simulate opinion?

Review systems as ways of manufacturing opinion, based off of opinions

Goal: rate based off of genre from internationally-popular distributors

Roadmap

How do we want to rate movies?

EDA

- BoxOfficeMojo
- Review sources: IMDB, RottenTomatoes, Metacritic

Which reviews to use as a basis?

Cleaning

- 🧹🧹
- Remove budget, MPAA

Which data to ignore?

Modeling

- Try: 4 approaches
- LASSO/Ridge CV, Q-Q plots, R^2

Which data to consider, and how to consider it?

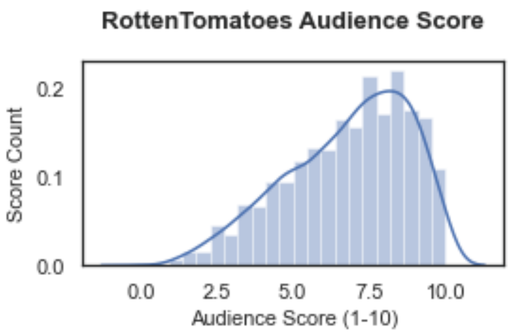
Visualization

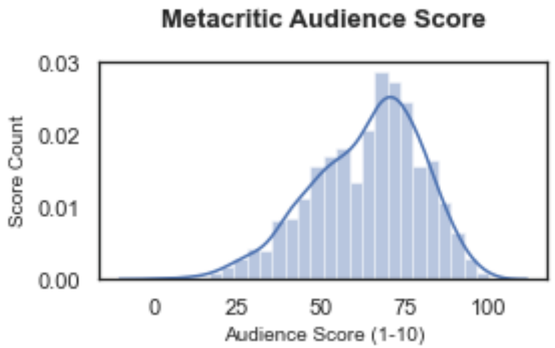
- Flask WebApp

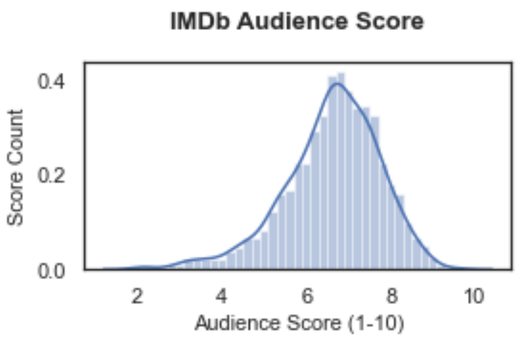
How to use manufactured opinion?

EDA

Data scraped using Scrapy web crawling framework (tutorial)



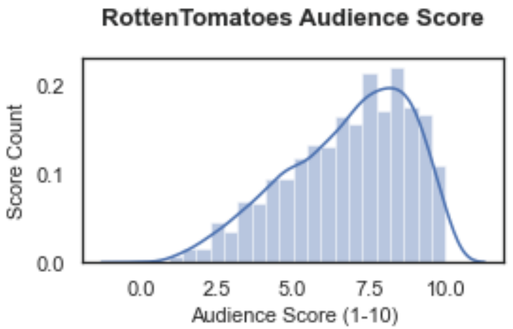




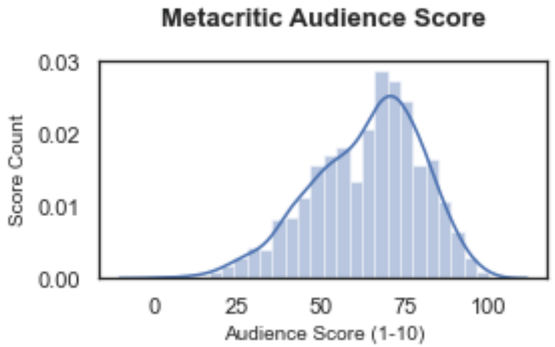
Tend to be skewed due to “7 is average” mentality

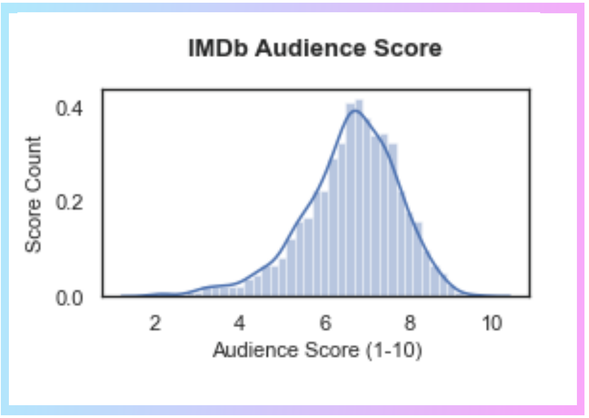
EDA

Data scraped using Scrapy web crawling framework (tutorial)



- Rating system is a “% positive” system, i.e. did you like it yes/no



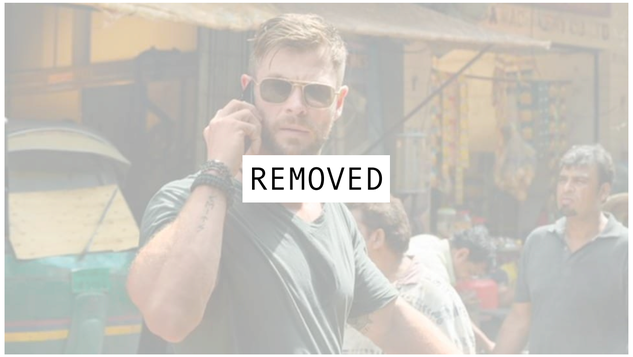


- Most normal
- Rating system is 1-10, not % positive

EDA -> Cleaning

MPAA removed: we do not care about “PG-13” or “R” these are not interesting ways of reviewing movies (while they still might be valuable in making an accurate prediction model, we are more interested in interpretation)

Budget removed: we do not want to bias towards wealthy studios (fame is boring and with the way the movie industry is, money tends to be concentrated in the production of dumb films)



EDA -> Cleaning -> Modeling

Technical terms

Add-in “domestic-international ratio”

One-hot-encode genre

Genre-genre interactions

Over-represent smaller studios by replacing <40 movies a year with “Other”

Non-technical translation

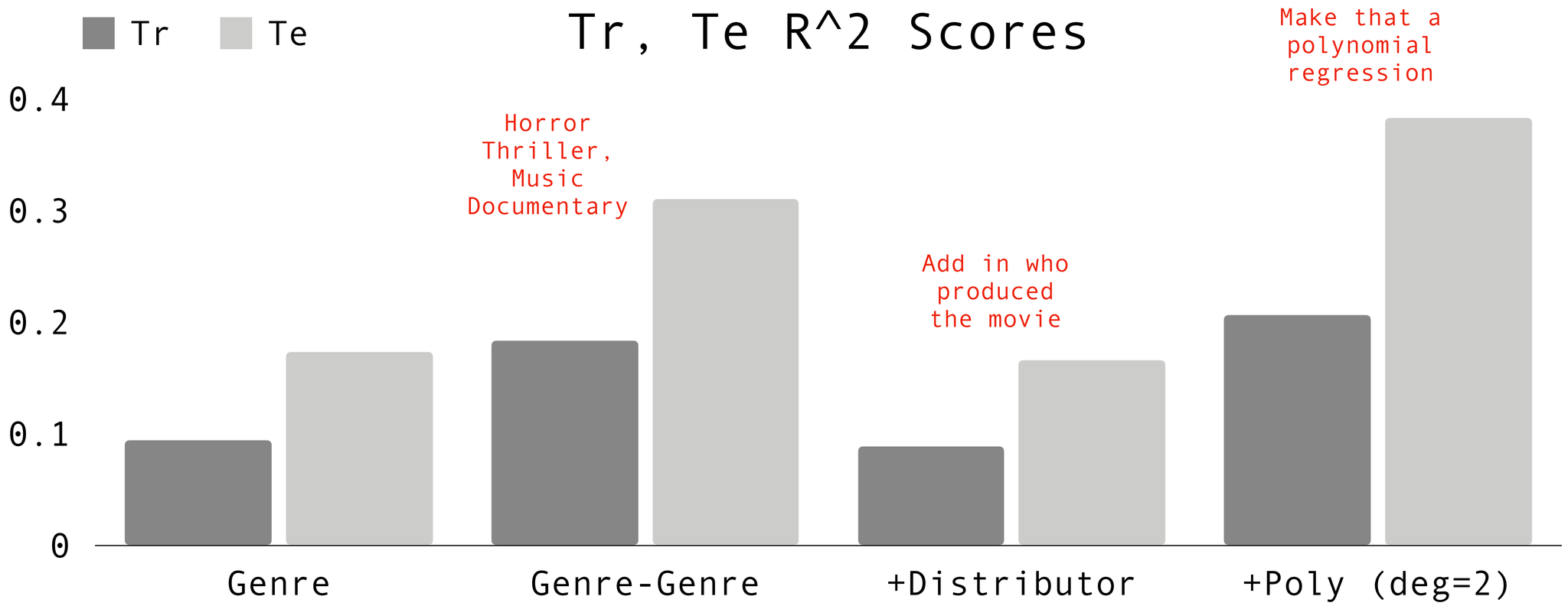
Favor internationally-successful movies

Take into account genre

Capture “anime+war” not just “anime”

Bias towards smaller studios

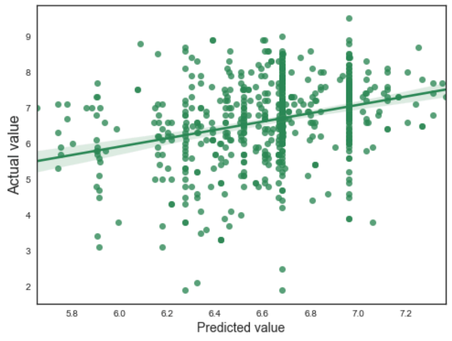
EDA -> Cleaning -> Modeling



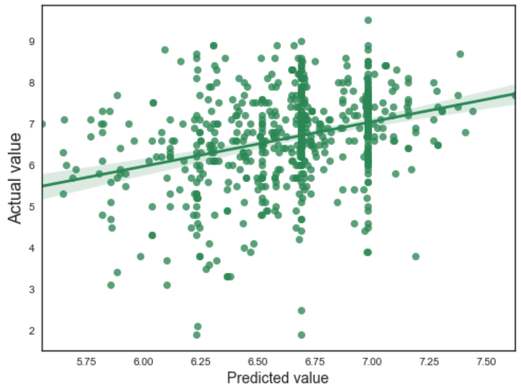
R^2 is just one metric. How can we look into the question: linear or polynomial?

LINEAR

Residual plot of LASSO 5-fold CV model



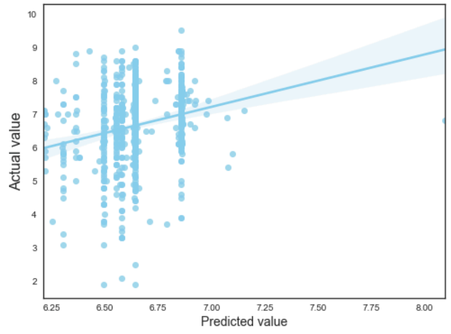
Residual plot of Ridge 5-fold CV model



Residuals should be normally distributed with zero mean

POLYNOMIAL

Residual plot of LASSO 5-fold CV model (polynomial)



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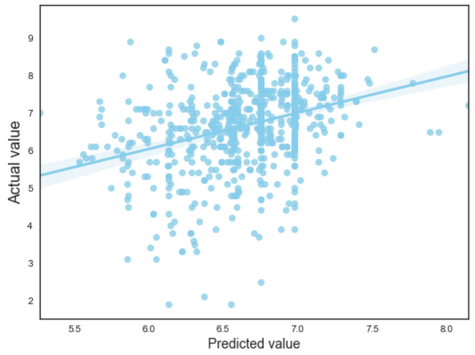

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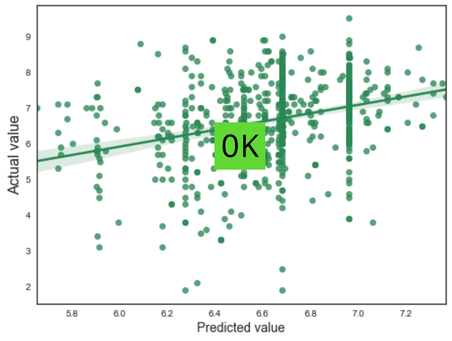

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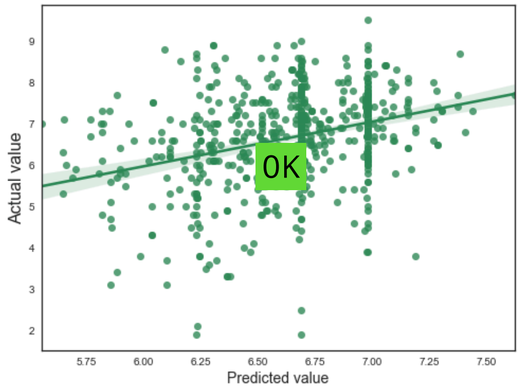

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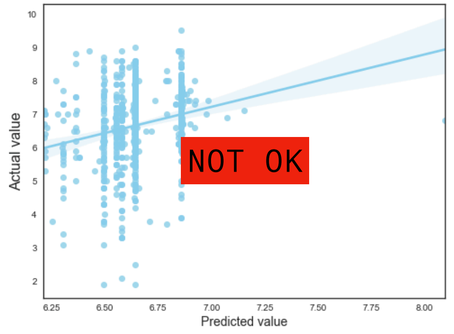
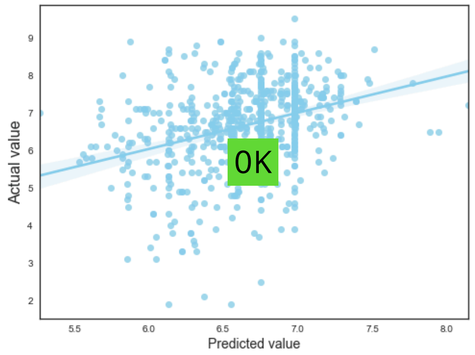
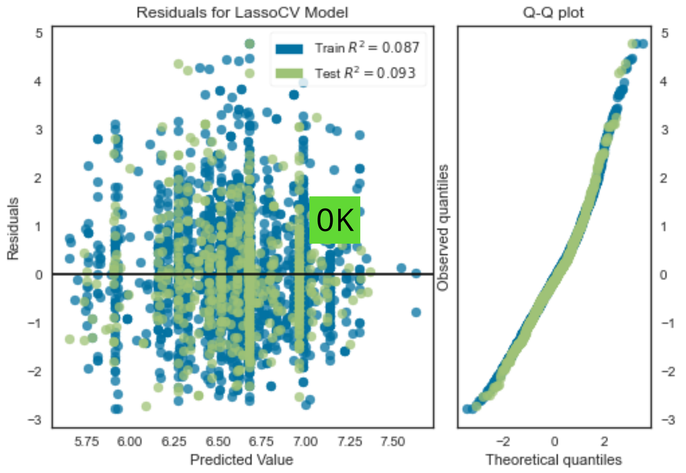
Residual plot of LASSO 5-fold CV model (polynomial)

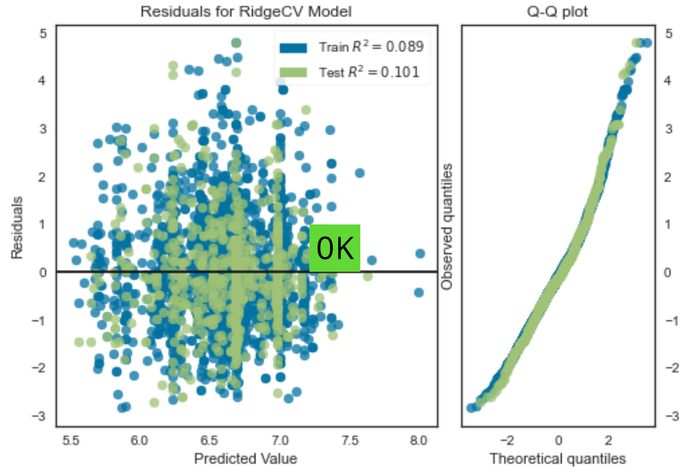


Residual plot of Ridge 5-fold CV model (polynomial)



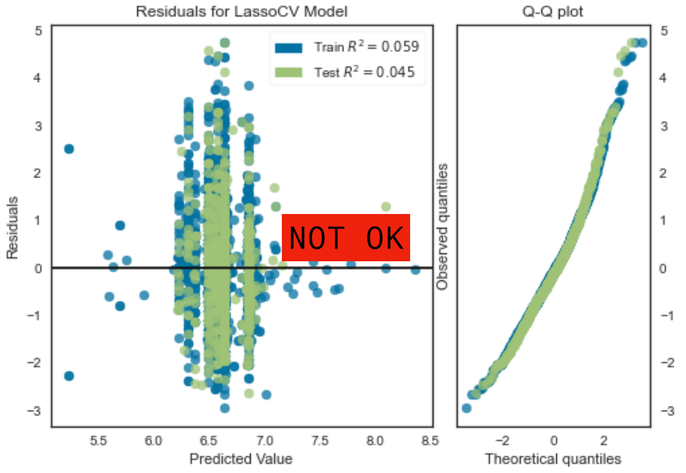
LINEAR

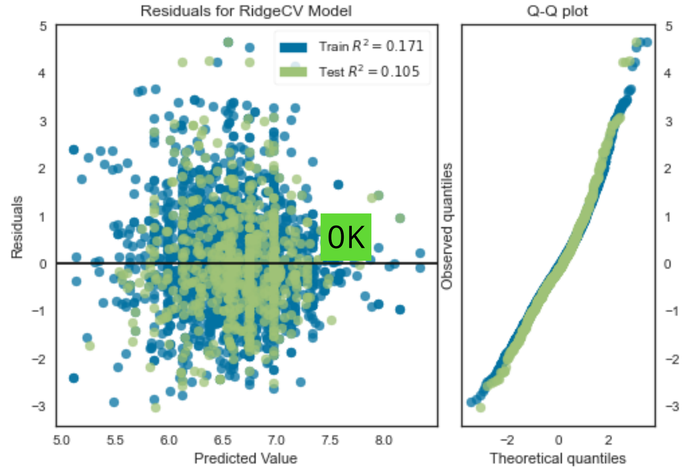




Q-Q plots should be normal (straight line)

POLYNOMIAL





EDA -> Cleaning -> Modeling

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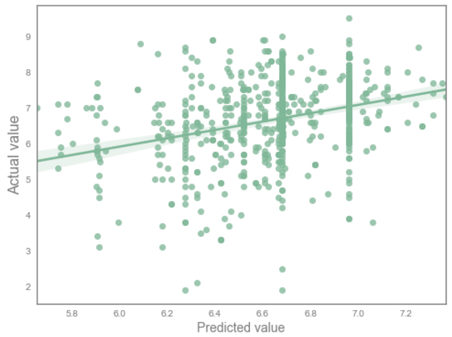
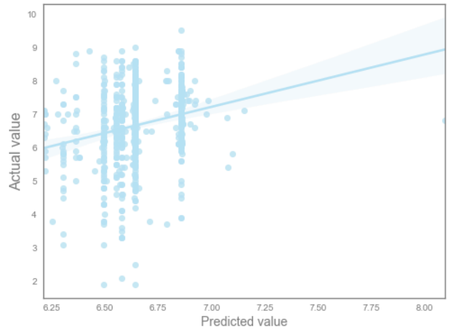


Residual plot of LASSO 5-fold CV model (polynomial)



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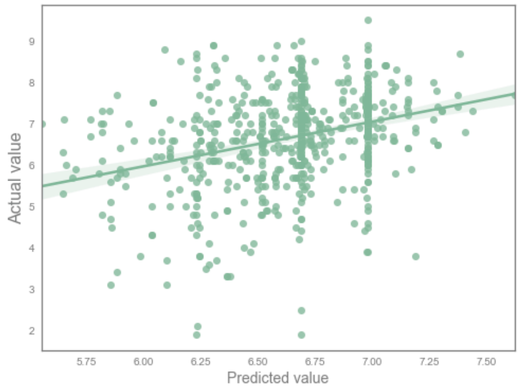

Residual plot of Ridge 5-fold CV model (polynomial)

EDA -> Cleaning -> Modeling -> Visualizing

How do we make people care?

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By showing them movie pictures!

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Demo

liamisaacs.com/liamometer

Conclusions

- Now you know, if all you cared about was internationally successful movies form lesser-known studios, what you would care about.