Predicting IMDB Rating on Movies

Linear Regression Modeling
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Introduction

- IMDB is the largest movie database
- Goal of this project is to predict IMDB Ratings
- Visualize relationship between independent variables with dependent variable
  - Features include director, release year, metascore, MPAA, gross earnings, votes, genre
- Determine the best model to that accurately depicts IMDB ratings

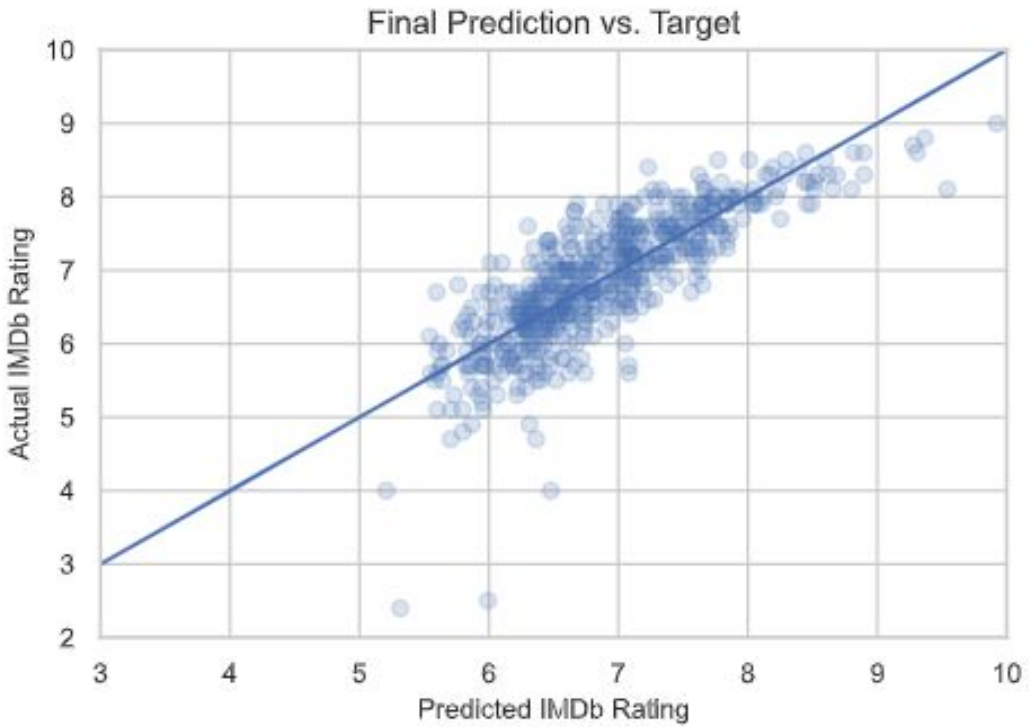
Methodology

- Web scraped data off IMDB.com using BeautifulSoup
  - Data cleaned/ simple EDA
- Added on features one at a time
  - Numeric first
  - Categorical second
- Modeling
  - Linear Regression
  - Polynomial Regression
  - Regularization (Ridge)

Ridge Regression Model

$R^2 = 0.609$

MAE = 0.384



Best Features

Age

Movies between the ages 10-30 tend to do better

Metascore

Different rating system for movies

Votes

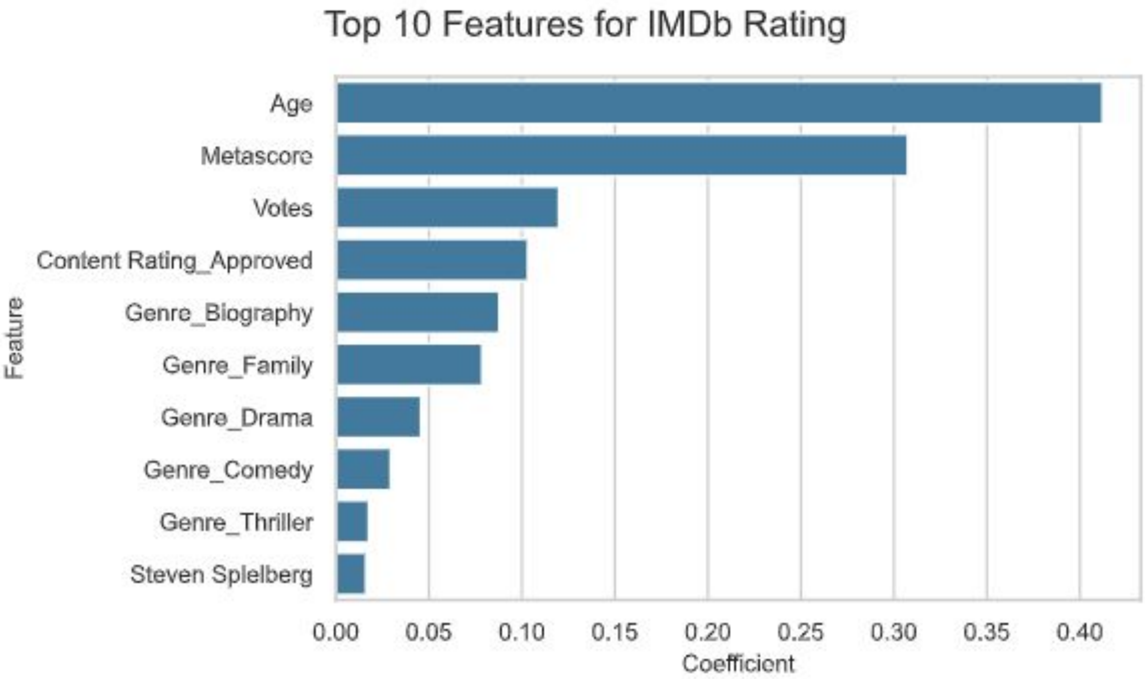
More popular = better ratings?

Genres

Biography, Family, Drama

Director

Movies directed by Steven Spielberg



Conclusions/Results

- Ridge Regression gave me the best model out of Linear and Polynomial
- Linear and Polynomial Regression made my model overfit when testing on validation set
- Residuals showed that my model tend to over predict than under predict
- Training score was 0.64 where as testing score was 0.60

Future Work

- Determine if the profit made on release day can depict how well a movie’s rating is
    - Do more popular films get better rating?
- Look into international films
    - Do movies produced in the US do better than movies produced elsewhere?