

D&D Challenge Rating Prediction & Calculation

By Jocelyn Fisher

Summary

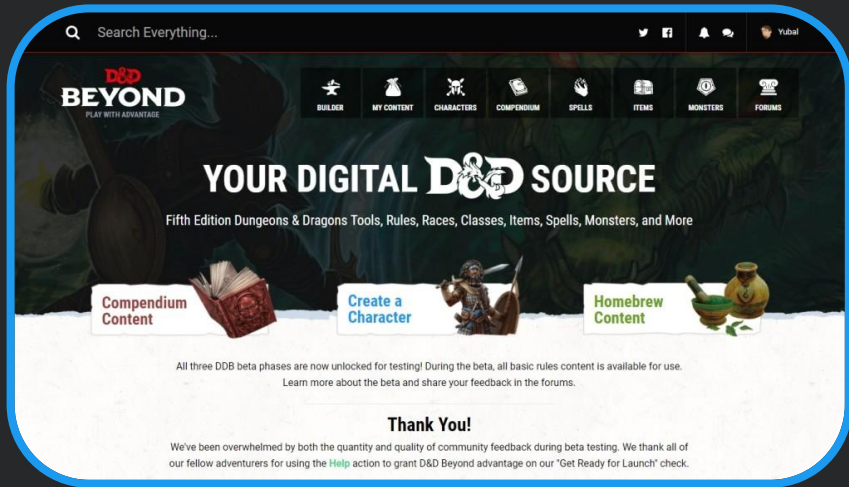
This project uses an iterative approach to Regression Modelling in order to understand how a Dungeon & Dragons Monster stats may effect its Challenge Rating (CR). D&D Beyond can use this Prediction Model to calculate the CR of any Home-brew Monster to a 91% accuracy once implemented into their Website.

Outline



- **Business Problem**
- **Data**
- **Methods**
- **Results**
- **Conclusions**

Business Problem



- Missing Tool to predict/calculate the Challenge Rating of Home-brew Monsters
- Correlation of what dictates CR is mostly unknown to the player base
- Increasing popularity and possible influx of new players

The Data

The data sourced for this regression analysis comes from Kaggle, which has been API scraped from an online version of the Official 5th Edition Dungeon & Dragons Compendium.

- 762 different D&D Monsters
- 53 columns of stats
- Action and Attack abilities



The Methods

Through various visualisations and Linear Regression Analysis, the project went through five total iterations, including the simple base model.

These versions tackled issues including:

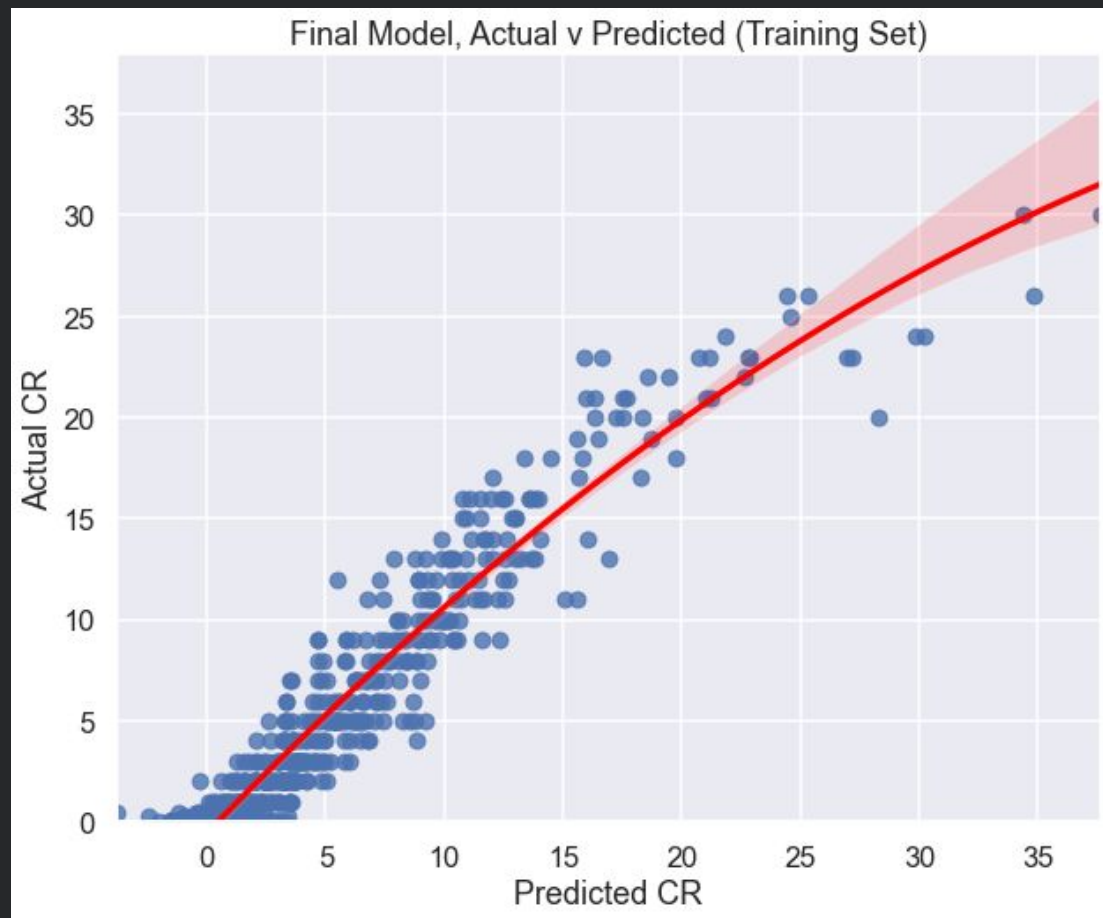
1. Identifying different types of Categorical data
2. Appropriate transformation of variables
3. Utilising selector functions

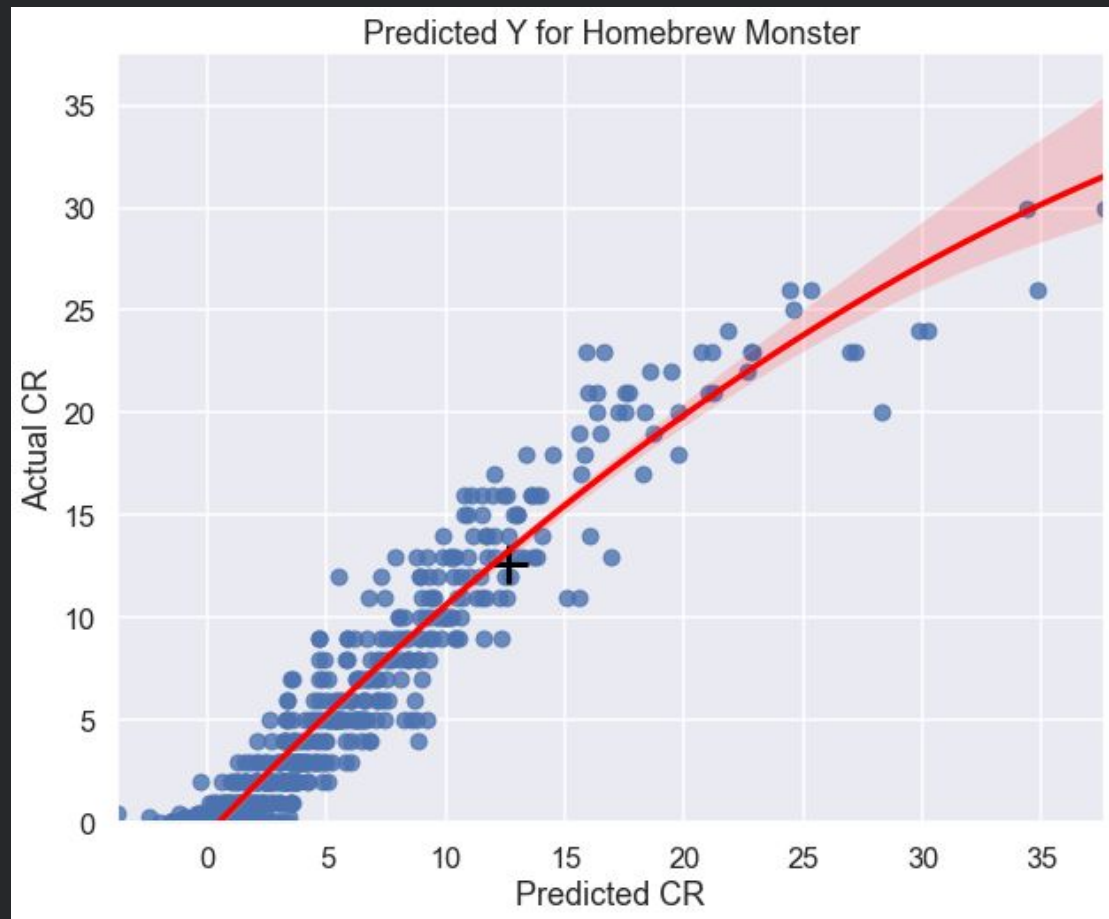


The Results

This regression analysis can successfully account for the variance of 91% of the model using the top 15 features to predict CR.







Conclusions

D&D Beyond may use this prediction model to implement a Challenge Rating Calculator for their Monster Creation Tool, and make it available to the online platform players.

- Highly correlated stats to CR are now revealed
- Further analysis could prove useful into the Fiend Monster Type
- The model can be used as more D&D Monsters are released

Thank You!

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