



EUROVISION

ODDS vs REALITY

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Project Repository



Introduction to
Data Science
2022
Project E12

INTRODUCTION & GOALS

Eurovision (ESC) is an annual song contest featuring participants from over 50 countries. Countries submit original songs to be performed live on TV, with a panel of judges and public voting determining the winner, who will be granted the right to host the next years' contest.

The contest consists of two semi finals and a grand final, with the top 10 countries from each semi-final participating in the grand final, alongside the „Big Five“ and the previous years' winner.

A number of factors determine if a song will qualify to the final, with the main feature being the country of origin. Avid viewers like us tend to often bet on well-performing countries **in the hopes of earning extra money**.

In this project, we aim to **roughly predict the results**, find if and **what features affect the position of a country**, and **identify which countries tend to perform consistently well or poorly in both the actual results and betting odds**.

DATA, METHODS & RESULTS

Our dataset included all ESC grand final entries from 1956 to 2018 with features such as year, running order, country, singer, title, points, place, language, love mentions, and countries' population.

We added the missing data for 2019, 2021 and 2022, feature engineered all data to be numeric, and applied machine learning algorithms such as Support Vector Machines (SVM), Random Forest, K-Nearest Neighbors (KNN) with $k=5$, Lasso, and Ridge to predict points, which were ordered to find the predicted places. We grouped placements together (i.e top 3, top 10, etc.) to find the accuracy of the model.

The results varied, but our best model (KNN) was able to accurately predict the top 10 contestants with an accuracy of 58.9%. In general, trying to predict Eurovision results is pretty difficult, since everything varies from year to year, and the contests' rules and format are changed quite often.

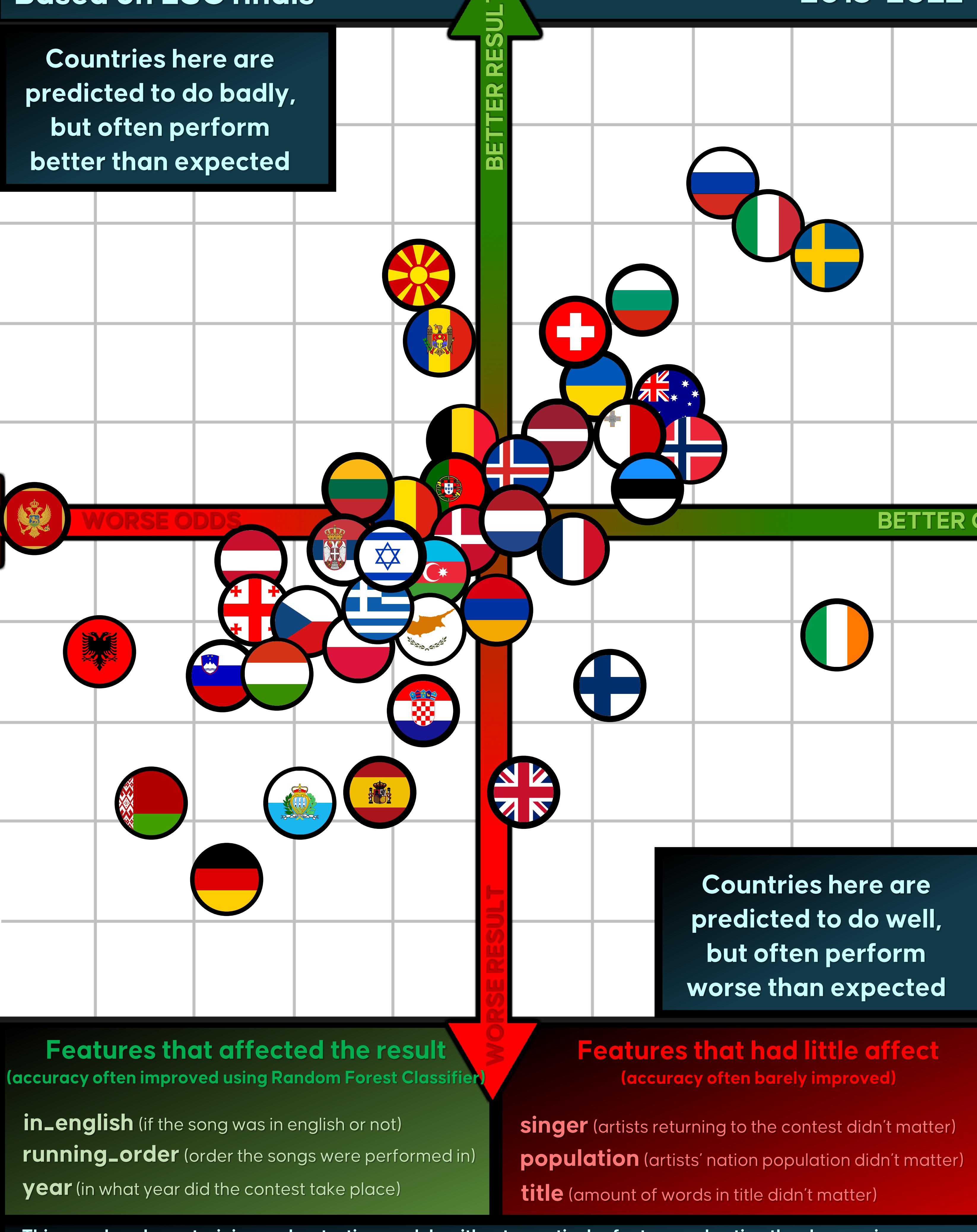
Average odds in contrast to average actual position

Based on ESC finals

2015-2022*

Countries here are predicted to do badly, but often perform better than expected

BETTER RESULT



PREDICTIONS (2017)

Trained on dataset ESCDB2.csv (107 kB),
K-nearest Neighbours ($k=5$)



winner



Bulgaria

In 2017, the winner was actually Portugal, Bulgaria came 2nd. Our model's prediction was off by JUST 1 place.



TOP 3

(accuracy 0.4)



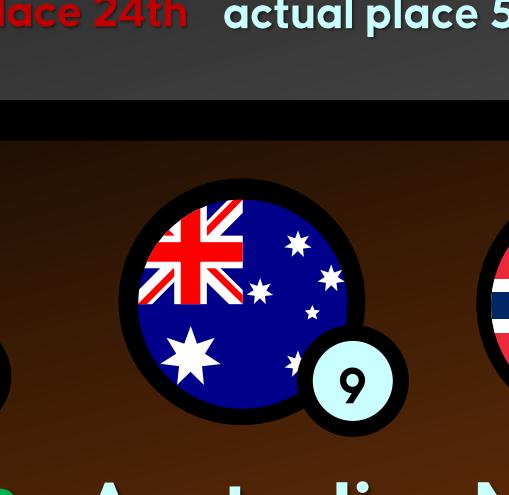
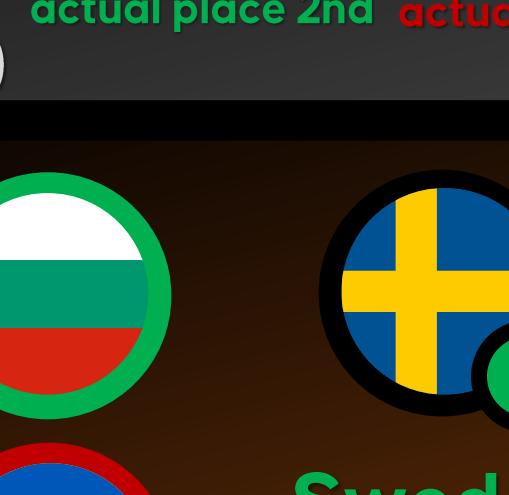
Bulgaria



Ukraine

In the dot is the actual result
2 Green means the prediction was correct
5 White means the prediction was off by 1
24 Red means the prediction was off by more than 1

Correct prediction
Wrong prediction



Sweden

Actual place 2nd
Predicted place 5th



TOP

5

(accuracy 0.4)



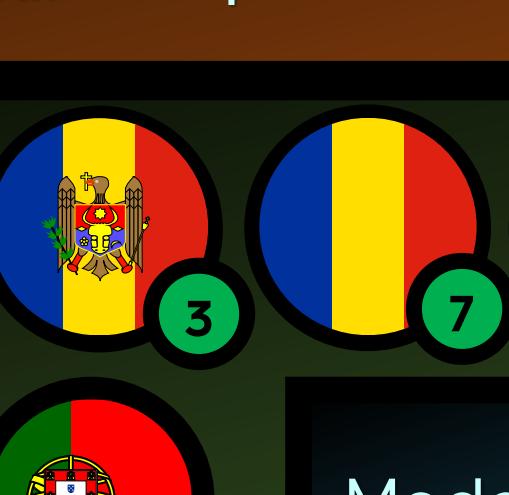
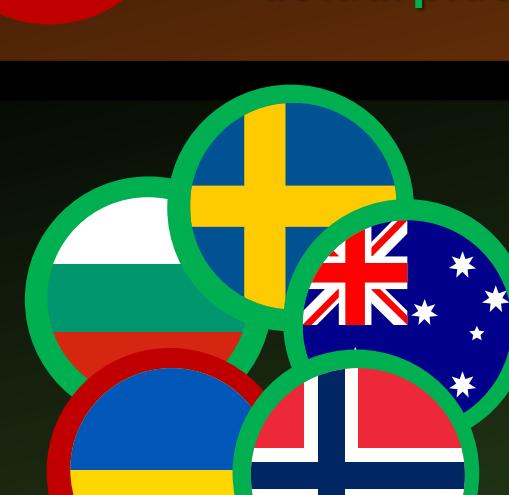
Sweden



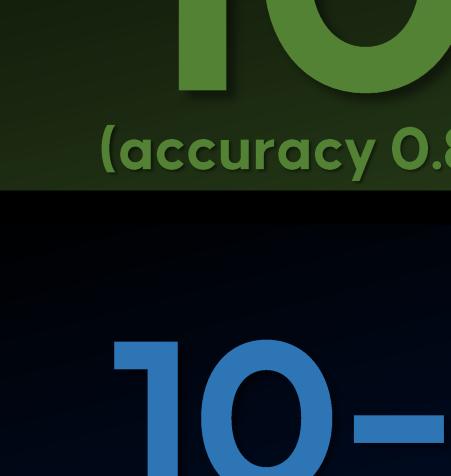
Australia

Actual place 9th
Predicted place 10th

Correct prediction
Wrong prediction



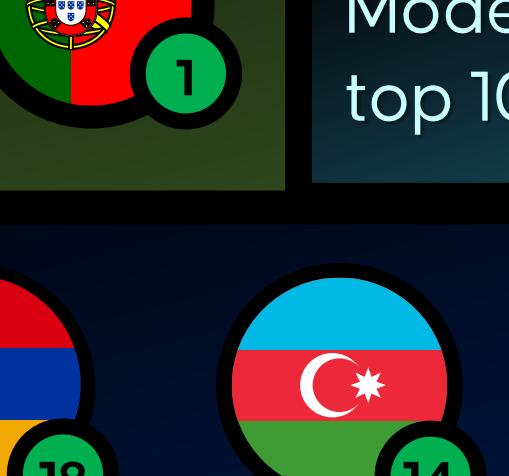
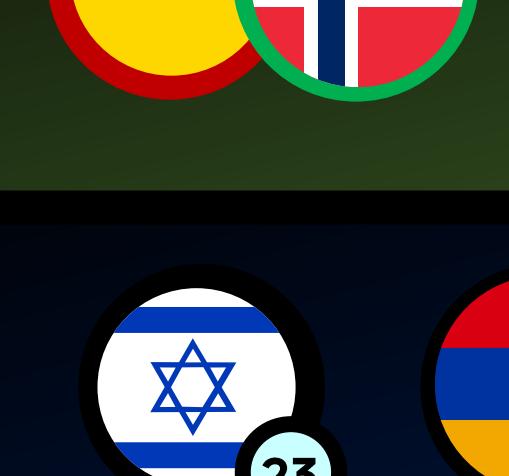
Norway



TOP

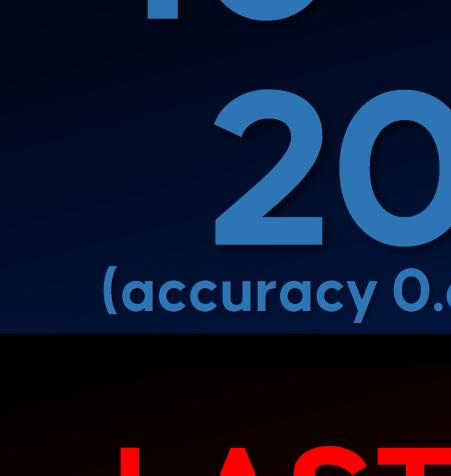
10

(accuracy 0.8)



Model predicted top 10 countries

8/10



Correct prediction
Wrong prediction

Actual place 23rd
Predicted place 18th

Actual place 6th
Predicted place 19th

Actual place 11th
Predicted place 21st

Actual place 17th
Predicted place 13th

Actual place 21st
Predicted place 11th

Actual place 17th
Predicted place 8th



Actual place 23rd
Predicted place 18th

Actual place 6th
Predicted place 19th

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Predicted place 21st

Actual place 17th
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Actual place 23rd
Predicted place 18th

Actual place 6th
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