



IBM Developer
SKILLS NETWORK

Winning Space Race with Data Science

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Outline

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Introduction

SpaceX has pushed the limits
on aerospace technology.

Falcon 9 is now a reality

So...



Introduction

What if we could predict the success of first Falcon 9 landing?

If we would, an another company could estimate the final launching cost, allowing it to bid against SpaceX.

Competition leads to concurrence which, in turn, leads to innovation.



Section 1

Methodology

Data Collection

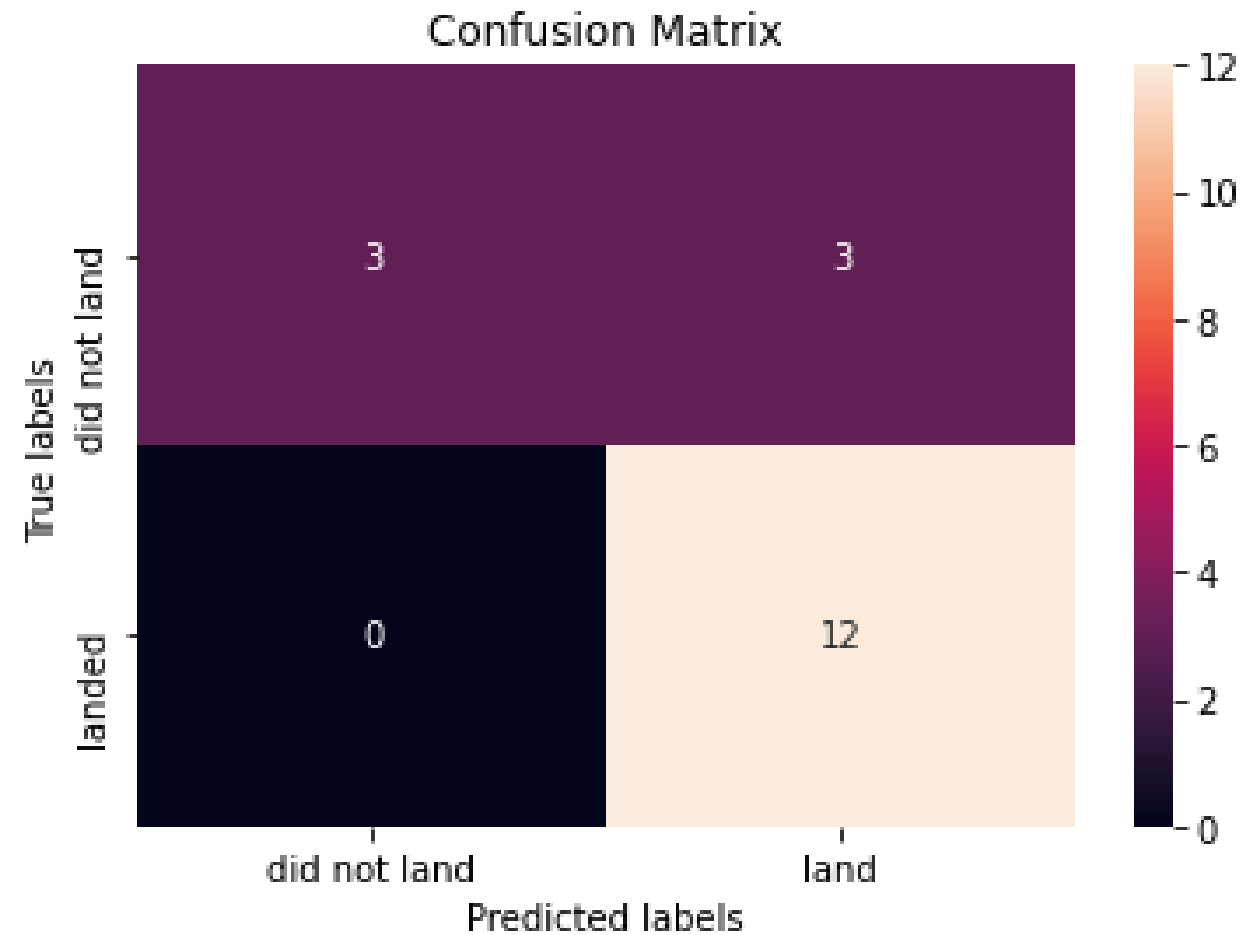
- The data was collected using the SpaceX API available at <https://api.spacexdata.com/>
- From this API we could obtain data about Payload, Booster Version, Cores, Launch Sites etc.
- We could also get the past launches performed by SpaceX by accessing data available at <https://api.spacexdata.com/v4/launches/past>

Data Collection – SpaceX API

- The following Jupyter Notebook was used to complete the Data Collection and Wrangling phases:
https://github.com/maiconmelo/ibm_datascience/blob/main/jupyter-labs-spacex-data-collection-api.ipynb

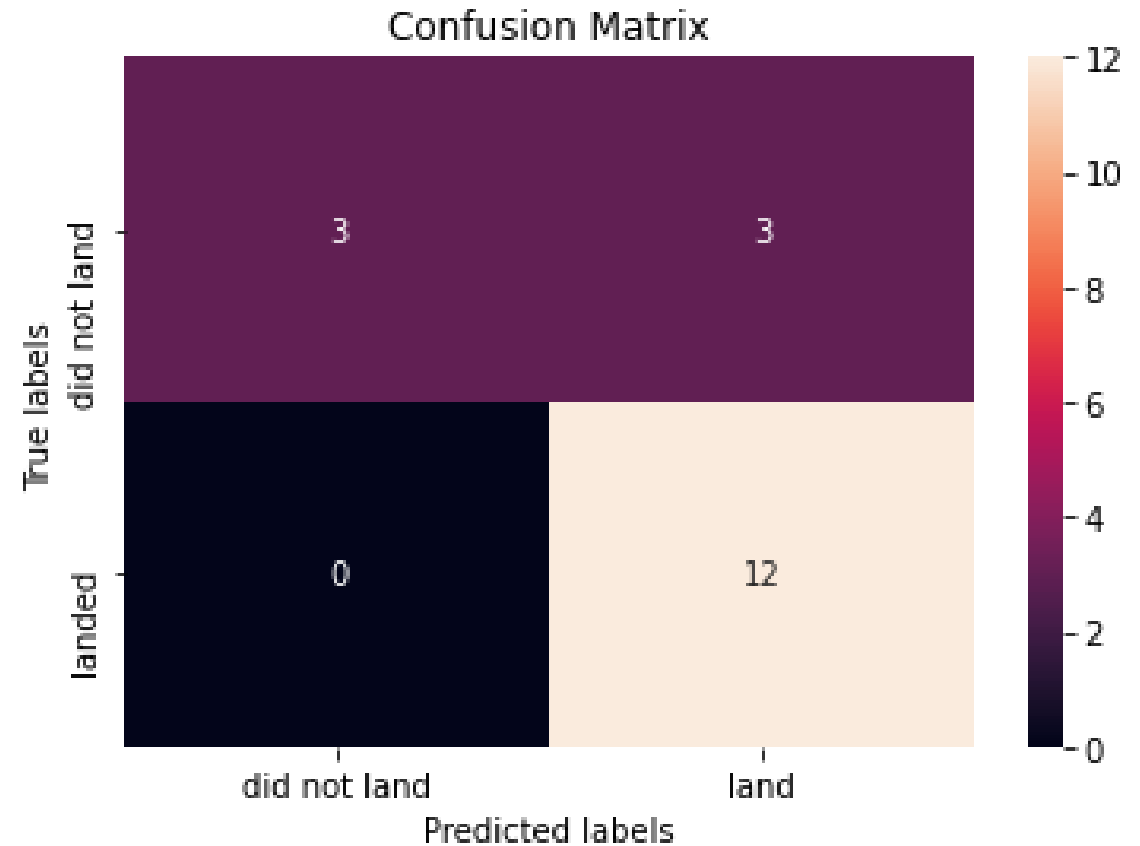
Predictive Analysis (Classification)

- Logistic Regression results
 - Test accuracy: 83%



Predictive Analysis (Classification)

- Support Vector Machine
 - Test accuracy: 83%



Predictive Analysis (Classification)

- Classification Trees
 - Test accuracy: 93%



Predictive Analysis (Classification)

- KNN
 - Test accuracy: 83%



Results

- Decision Trees achieved the best result with test accuracy equal to 93%

Thank you!

