

# CCSEL1-18 Professional Elective [ Spaceship Titanic ]

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Documentation and Leaderboard  
January 2, 2024

## SpaceShip Titanic-Code

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**Competition Notebook**  
[Spaceship Titanic](#)

**Run**  
30.1s

**Public Score**  
0.49310

**Best Score**  
[0.4931 V2](#)

**Version 2 of 2**

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In [1]:

```
# Vem AienSI Marasigan
```

In [2]:

```
# This Python 3 environment comes with many helpful analytics libraries installed
# It is defined by the kaggle/python Docker image: https://github.com/kaggle/docker-python
# For example, here's several helpful packages to load

import numpy as np # linear algebra
import pandas as pd # data processing, CSV file I/O (e.g. pd.read_csv)

# Input data files are available in the read-only "../input/" directory
# For example, running this (by clicking run or pressing Shift+Enter) will list all files under the input directory

import os
for dirname, _, filenames in os.walk('/kaggle/input'):
    for filename in filenames:
        print(os.path.join(dirname, filename))
```

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In [3]:

```
test_data = pd.read_csv("/kaggle/input/spaceship-titanic/test.csv")
test_data.head()
```

Out[3]:

	PassengerId	HomePlanet	CryoSleep	Cabin	Destination	Age	VIP	RoomService	FoodCourt	ShoppingMall	Spa	VR
0	0013_01	Earth	True	G/3/S	TRAPPIST-1e	27.0	False	0.0	0.0	0.0	0.0	0.0
1	0018_01	Earth	False	F/4/S	TRAPPIST-1e	19.0	False	0.0	9.0	0.0	2823.0	0.0
2	0019_01	Europa	True	C/0/S	55 Cancri e	31.0	False	0.0	0.0	0.0	0.0	0.0
3	0021_01	Europa	False	C/1/S	TRAPPIST-1e	38.0	False	0.0	6652.0	0.0	181.0	58.0
4	0023_01	Earth	False	F/5/S	TRAPPIST-1e	20.0	False	10.0	0.0	635.0	0.0	0.0

In [4]:

```
ss_data = pd.read_csv("/kaggle/input/spaceship-titanic/sample_submission.csv")
ss_data.head()
```

Out[4]:

	PassengerId	Transported
0	0013_01	False
1	0018_01	False
2	0019_01	False
3	0021_01	False
4	0023_01	False

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In [5]:

```
import tensorflow as tf
import tensorflow_decision_forests as tfdf
import pandas as pd
import numpy as np
import seaborn as sns
import matplotlib.pyplot as plt
```

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Solution

```
In [6]: rf = tfidf.keras.RandomForestModel()
rf.compile(metrics=["accuracy"]) # Optional, you can use this to include a list of eval metrics

# Load the test dataset
test_df = pd.read_csv('/kaggle/input/spaceship-titanic/test.csv')
submission_id = test_df.PassengerId

# Replace NaN values with zero
test_df[['VIP', 'CryoSleep']] = test_df[['VIP', 'CryoSleep']].fillna(value=0)

# Creating New Features - Deck, Cabin_num and Side from the column Cabin and remove Cabin
test_df[['Deck', 'Cabin_num', 'Side']] = test_df["Cabin"].str.split("/", expand=True)
test_df = test_df.drop('Cabin', axis=1)

# Convert boolean to 1's and 0's
test_df['VIP'] = test_df['VIP'].astype(int)
test_df['CryoSleep'] = test_df['CryoSleep'].astype(int)

# Convert pd dataframe to tf dataset
test_ds = tfidf.keras.pd_dataframe_to_tf_dataset(test_df)

# Get the predictions for testdata
predictions = rf.predict(test_ds)
n_predictions = (predictions > 0.4).astype(bool)
output = pd.DataFrame({'PassengerId': submission_id,
                       'Transported': n_predictions.squeeze()})
output.head()
```

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Submitting the prediction

```
In [7]: sample_submission_df = pd.read_csv('/kaggle/input/spaceship-titanic/sample_submission.csv')
sample_submission_df['Transported'] = n_predictions
sample_submission_df.to_csv('/kaggle/working/submission.csv', index=False)
sample_submission_df.head()
```

Out[7]:

	PassengerId	Transported
0	0013_01	False
1	0018_01	False
2	0019_01	False
3	0021_01	False
4	0023_01	False

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The screenshot shows the Kaggle interface for the 'Spaceship Titanic' competition. On the left is a sidebar with navigation links: Home, Competitions, Datasets, Models, Code, Discussions, Learn, More, Your Work, and a 'VIEWED' section listing recent competitions. The main content area has a search bar at the top. Below it, the competition title 'Spaceship Titanic' is displayed with the subtitle 'Predict which passengers are transported to an alternate dimension'. A 'Submit Prediction' button is visible. Below the title are tabs for Overview, Data, Code, Models, Discussion, Leaderboard (selected), Rules, and Team. The 'Leaderboard' tab shows a 'YOUR RECENT SUBMISSION' box with a green checkmark, the filename 'submission.csv', the submitter 'Submitted by Vem Aienai', the time 'Submitted 10 seconds ago', and a score of '0.49310'. A button 'Jump to your leaderboard position' is also present. At the bottom of the submission box is a search bar labeled 'Search leaderboard'. On the right side of the leaderboard section are buttons for 'Raw Data' and 'Refresh'.

Files for this challenge

<https://github.com/VemAienai/Professional-Elective-Course/tree/main/Kaggle-Competiton/Space-Titanic>

Other Competition

<https://github.com/VemAienai/Professional-Elective-Course/tree/main/Kaggle-Competiton>