# Titanic - Machine Learning from Disaster

GettingStarted Prediction Competition

## Overview

👋🛳️ *Ahoy, welcome to Kaggle! You’re in the right place*.

This is the legendary Titanic ML competition – the best, first challenge for you to dive into ML competitions and familiarize yourself with how the Kaggle platform works.

The competition is simple: use machine learning to create a model that predicts which passengers survived the Titanic shipwreck.

Read on or watch the video below to explore more details. Once you’re ready to start competing, click on the "Join Competition button to create an account and gain access to the competition data. Then check out Alexis Cook’s Titanic Tutorial that walks you through step by step how to make your first submission!

The data has been split into two groups:

* training set (train.csv)
* test set (test.csv)

The training set should be used to build your machine learning models. For the training set, we provide the outcome (also known as the “ground truth”) for each passenger. Your model will be based on “features” like passengers’ gender and class. You can also use [feature engineering](https://triangleinequality.wordpress.com/2013/09/08/basic-feature-engineering-with-the-titanic-data/)to create new features.

The test set should be used to see how well your model performs on unseen data. For the test set, we do not provide the ground truth for each passenger. It is your job to predict these outcomes. For each passenger in the test set, use the model you trained to predict whether or not they survived the sinking of the Titanic.

We also include gender\_submission.csv, a set of predictions that assume all and only female passengers survive, as an example of what a submission file should look like.

## The Challenge

The sinking of the Titanic is one of the most infamous shipwrecks in history.

On April 15, 1912, during her maiden voyage, the widely considered “unsinkable” RMS Titanic sank after colliding with an iceberg. Unfortunately, there weren’t enough lifeboats for everyone onboard, resulting in the death of 1502 out of 2224 passengers and crew.

While there was some element of luck involved in surviving, it seems some groups of people were more likely to survive than others.

In this challenge, we ask you to build a predictive model that answers the question: “what sorts of people were more likely to survive?” using passenger data (ie name, age, gender, socio-economic class, etc).

### Recommended Tutorial

We highly recommend [Alexis Cook’s Titanic Tutorial](https://www.kaggle.com/alexisbcook/titanic-tutorial) that walks you through making your very first submission step by step.

## Overview of How Kaggle’s Competitions Work

### 1. Join the Competition

Read about the challenge description, accept the Competition Rules and gain access to the competition dataset.

### 2. Get to Work

Download the data, build models on it locally or on Kaggle Kernels (our no-setup, customizable Jupyter Notebooks environment with free GPUs) and generate a prediction file.

### 3. Make a Submission

Upload your prediction as a submission on Kaggle and receive an accuracy score.

### 4. Check the Leaderboard

See how your model ranks against other Kagglers on our leaderboard.

### 5. Improve Your Score

Check out the [discussion forum](https://www.kaggle.com/c/titanic/discussion) to find lots of tutorials and insights from other competitors.

Kaggle Lingo Video  
You may run into unfamiliar lingo as you dig into the Kaggle discussion forums and public notebooks. Check out Dr. Rachael Tatman’s [video on Kaggle Lingo](https://www.youtube.com/watch?v=sEJHyuWKd-s) to get up to speed!

## What Data Will I Use in This Competition?

In this competition, you’ll gain access to two similar datasets that include passenger information like name, age, gender, socio-economic class, etc. One dataset is titled `train.csv` and the other is titled `test.csv`.

Train.csv will contain the details of a subset of the passengers on board (891 to be exact) and importantly, will reveal whether they survived or not, also known as the “ground truth”.

The `test.csv` dataset contains similar information but does not disclose the “ground truth” for each passenger. It’s your job to predict these outcomes.

Using the patterns you find in the train.csv data, predict whether the other 418 passengers on board (found in test.csv) survived.

Check out the [“Data” tab](https://www.kaggle.com/c/titanic/data) to explore the datasets even further. Once you feel you’ve created a competitive model, submit it to Kaggle to see where your model stands on our leaderboard against other Kagglers.

## How to Submit your Prediction to Kaggle

Once you’re ready to make a submission and get on the leaderboard:

1. Click on the “Submit Predictions” button

Interface gráfica do usuário, Site

Descrição gerada automaticamente

2. Upload a CSV file in the submission file format. You’re able to submit 10 submissions a day.

Interface gráfica do usuário, Texto, Aplicativo, Email

Descrição gerada automaticamente

## Submission File Format:

You should submit a csv file with exactly 418 entries plus a header row. Your submission will show an error if you have extra columns (beyond PassengerId and Survived) or rows.

The file should have exactly 2 columns:

* PassengerId (sorted in any order)
* Survived (contains your binary predictions: 1 for survived, 0 for deceased)

Got it! I’m ready to get started. Where do I get help if I need it?

For Competition Help: [Titanic Discussion Forum](https://www.kaggle.com/c/titanic/discussion)  
Technical Help: [Kaggle Contact Us Page](https://www.kaggle.com/contact)

Kaggle doesn’t have a dedicated support team so you’ll typically find that you receive a response more quickly by asking your question in the appropriate forum. The forums are full of useful information on the data, metric, and different approaches. We encourage you to use the forums often. If you share your knowledge, you'll find that others will share a lot in turn!

## A Last Word on Kaggle Notebooks

As we mentioned before, Kaggle Notebooks is our no-setup, customizable, Jupyter Notebooks environment with free GPUs and a huge repository of community published data & code.

In every competition, you’ll find many Kernels publically shared with incredible insights. It’s an invaluable resource worth becoming familiar with. Check out this competition’s Kernel’s [here](https://www.kaggle.com/c/titanic/kernels).

🏃‍♀Ready to Compete? [Join the Competition Here!](https://www.kaggle.com/account/login?returnUrl=%2Fc%2Ftitanic)

## Data Description

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## Data Dictionary

|  |  |  |
| --- | --- | --- |
| Variable | Definition | Key |
| survival | Survival | 0 = No, 1 = Yes |
| pclass | Ticket class | 1 = 1st, 2 = 2nd, 3 = 3rd |
| sex | Sex |  |
| Age | Age in years |  |
| sibsp | # of siblings / spouses aboard the Titanic |  |
| parch | # of parents / children aboard the Titanic |  |
| ticket | Ticket number |  |
| fare | Passenger fare |  |
| cabin | Cabin number |  |
| embarked | Port of Embarkation | C = Cherbourg, Q = Queenstown, S = Southampton |

## Variable Notes

pclass: A proxy for socio-economic status (SES)

1st = Upper

2nd = Middle

3rd = Lower

age: Age is fractional if less than 1. If the age is estimated, is it in the form of xx.5

sibsp: The dataset defines family relations in this way...

Sibling = brother, sister, stepbrother, stepsister

Spouse = husband, wife (mistresses and fiancés were ignored)

parch: The dataset defines family relations in this way...

Parent = mother, father

Child = daughter, son, stepdaughter, stepson

Some children travelled only with a nanny, therefore parch=0 for them.