Bankruptcy
How to pick a winning investment

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01 Objective

We have been contracted to advise a hedge fund looking to add prudent investments to their portfolio. The client is risk-averse.

We will build a classification model that predicts whether a company will succeed or go bankrupt in order to better advise our client which companies to invest with and which to avoid.

02

Exploratory data analysis of bankruptcy
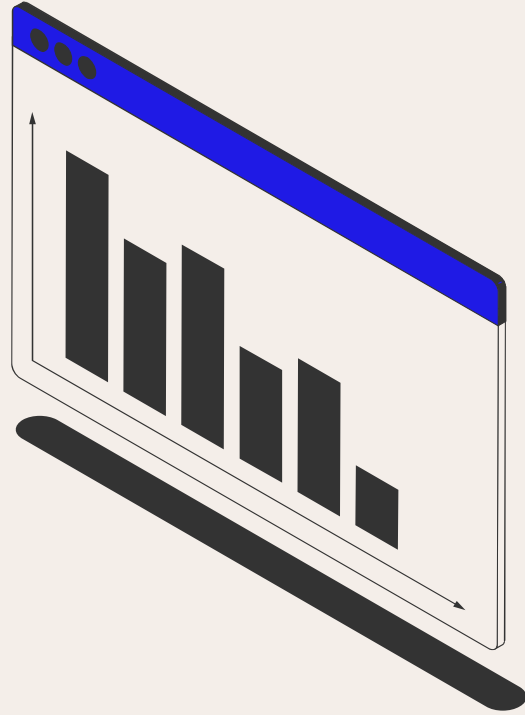
The **dataset**

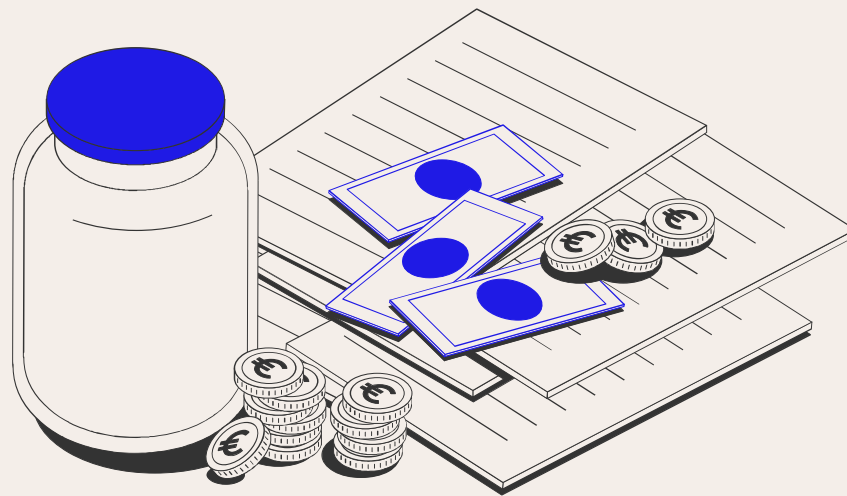US Company Bankruptcy Prediction Dataset (1999 - 2018)

- 8,971 distinct companies:

  8,362 are in business "alive"

  609 are bankrupt

- 18 financial health features such as:

  Total assets

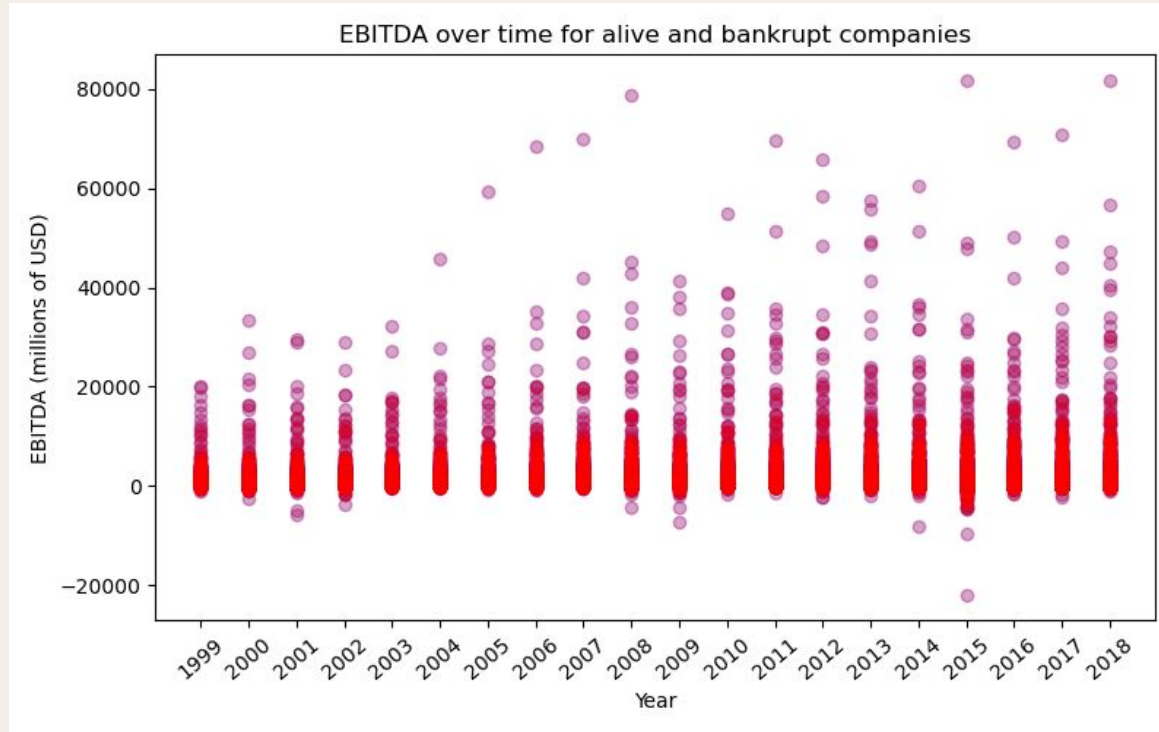 Earnings before interest and taxes
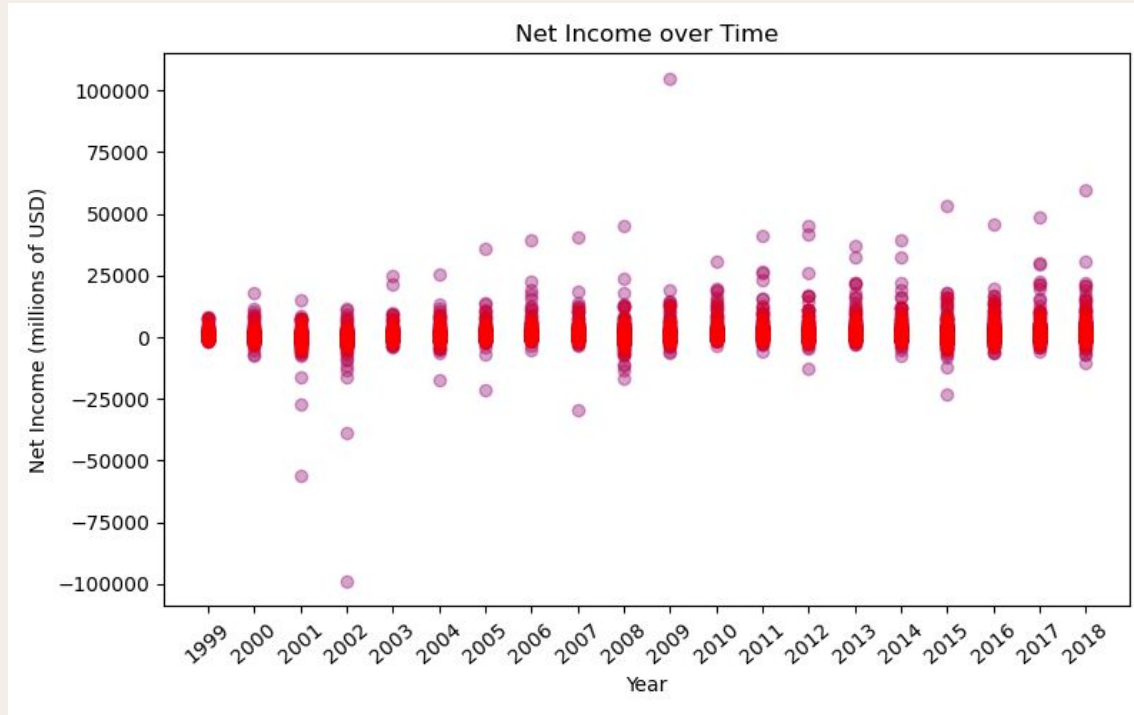
  Total Liabilities

  Total long-term debt

Link to dataset:
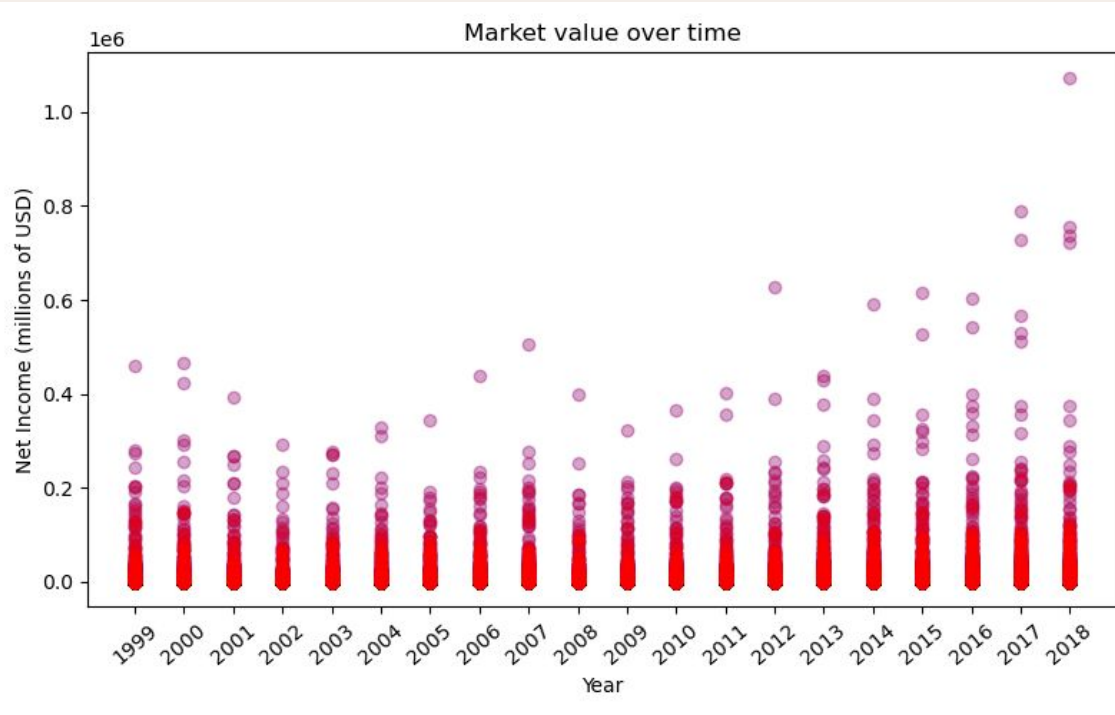https://www.kaggle.com/datasets/utkarshx27/american-companies-bankruptcy-prediction-dataset

The relationship between EBITDA and bankruptcy

EBITDA over time for alive and bankrupt companies

The relationship between Net income and bankruptcy

Net Income over Time

The relationship between <mark>market value</mark> and bankruptcy

Market value over time

The relationship between total liabilities and bankruptcy
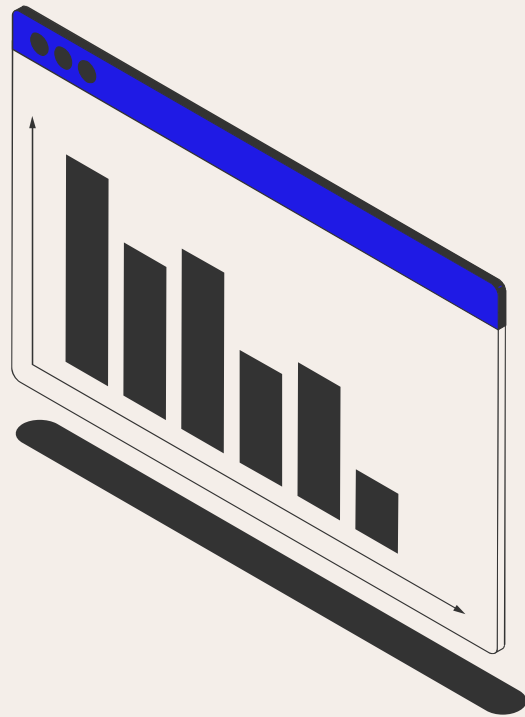

Total current liabilities over time
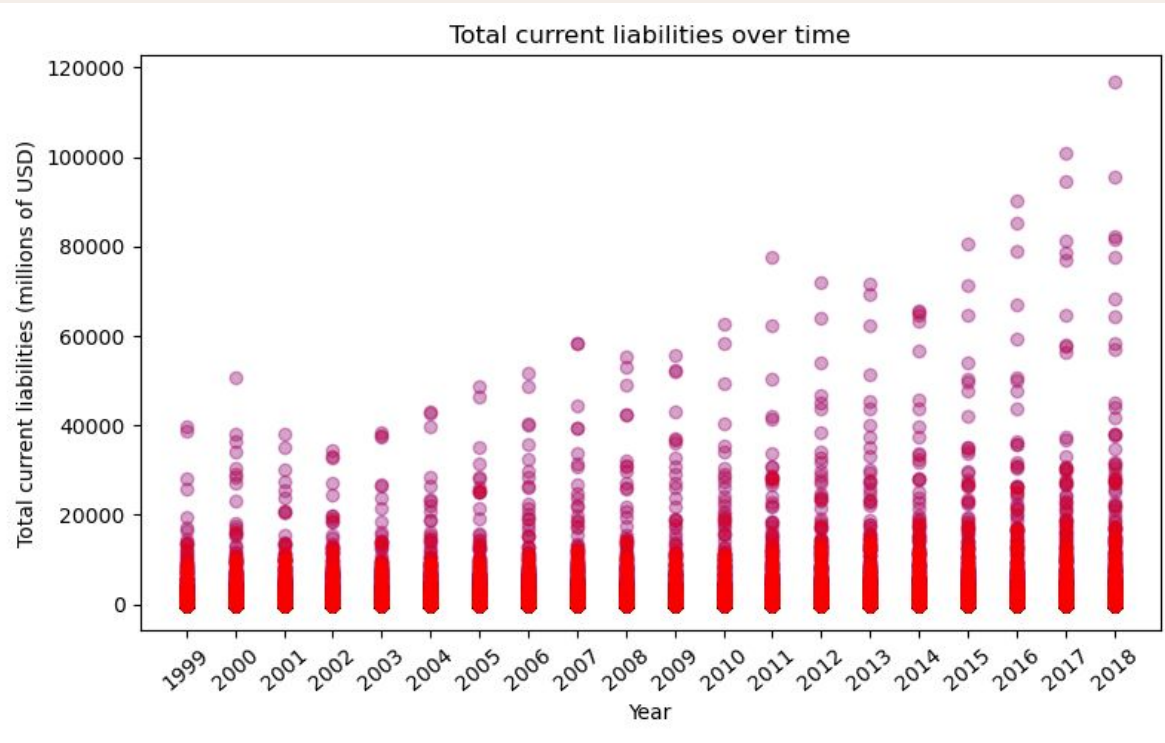
The relationship between ==operating costs== and bankruptcy
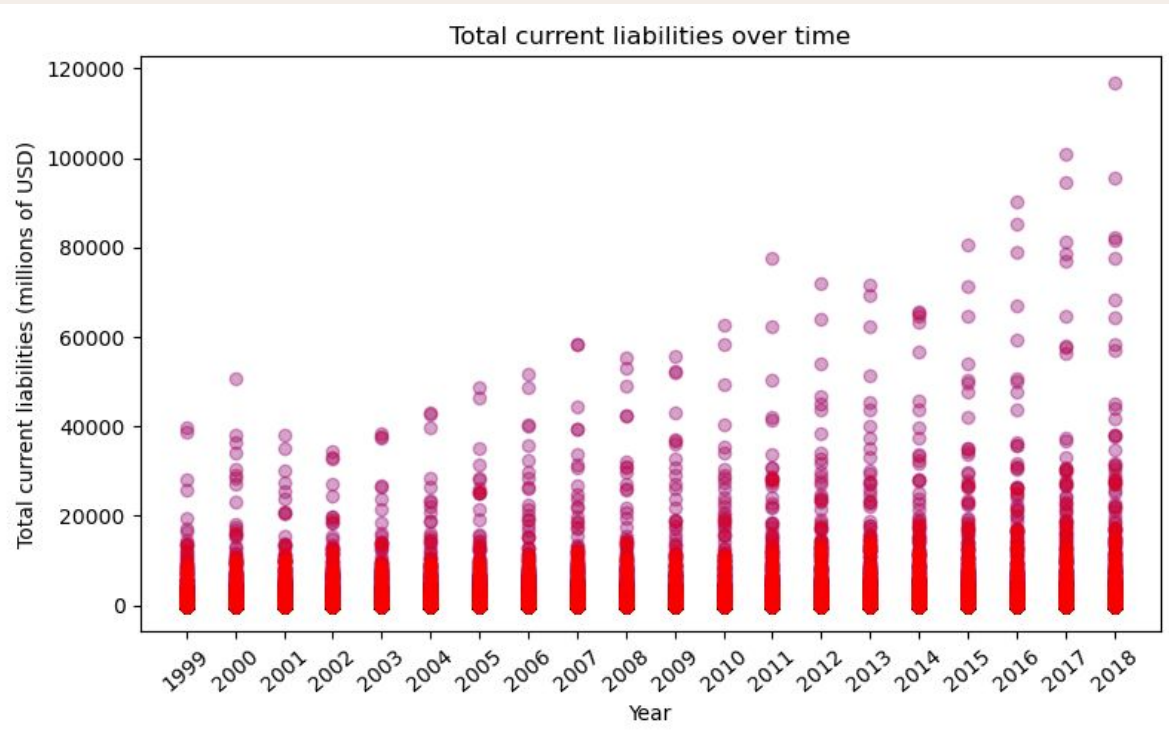
03

Tree models for classification

Handling imbalanced classes

Distribution of bankruptcy status