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SEC Data as Predictor of Corporate Success

Contents

1

Performance results

F1 score performances for each model

2

Learning Curves

Drawn with MSE as an error

3

Conclusions

The conclusions of the project

A large blue geometric shape, resembling a stylized arrow or a corner, pointing towards the right, located on the left side of the slide.

1. Performance results

F1 score performances for each model

Before parameter tuning...

F1 Score



The best models are
Decision tree, Random
forest, Multi-layer
perceptron and Keras
neural network on GPU.

Model	F1 Score
k-nearest neighbors	0.19
Linear logistic regression	0.02
Decision tree	0.38
Random forest	0.30
Support vector machine	0.02
Multi-layer perceptron	0.37
XGBoost	0.01
Keras neural network on GPU	0.33

After parameter tuning!

F1 Score



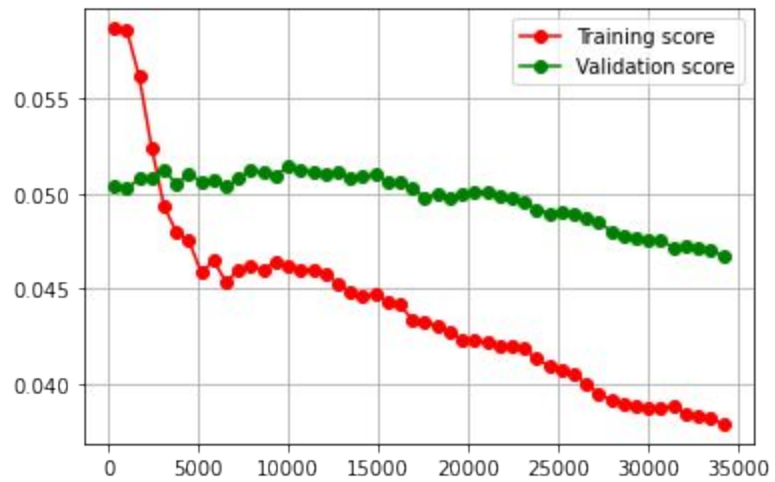
XGBoost seems to be the most robust to predict a company's profitability success in the medium term

Model	F1 Score (before tuning)	F1 Score (after tuning)
Decision tree	0.38	0.38
Random forest	0.30	0.32
Multi-layer perceptron	0.37	0.46
XGBoost	0.01	0.62
Keras neural network on GPU	0.33	0.48

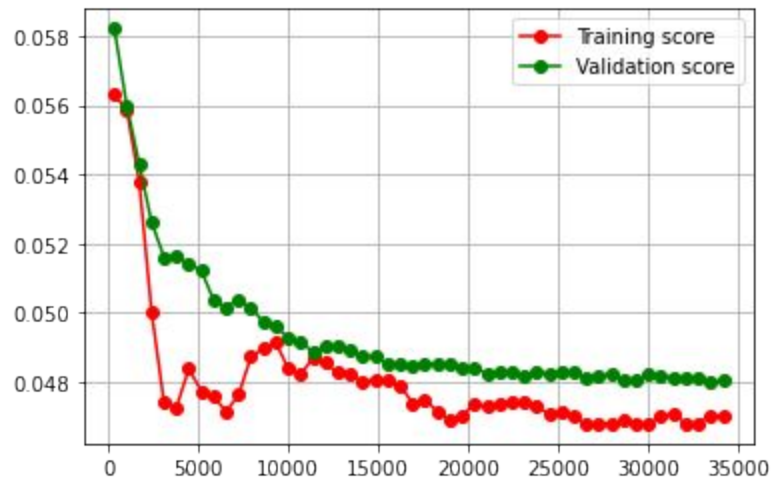
A large blue geometric shape, resembling a stylized 'L' or a corner, occupies the left side of the slide. It has a diagonal cut across its top-right corner.

2. Learning Curves

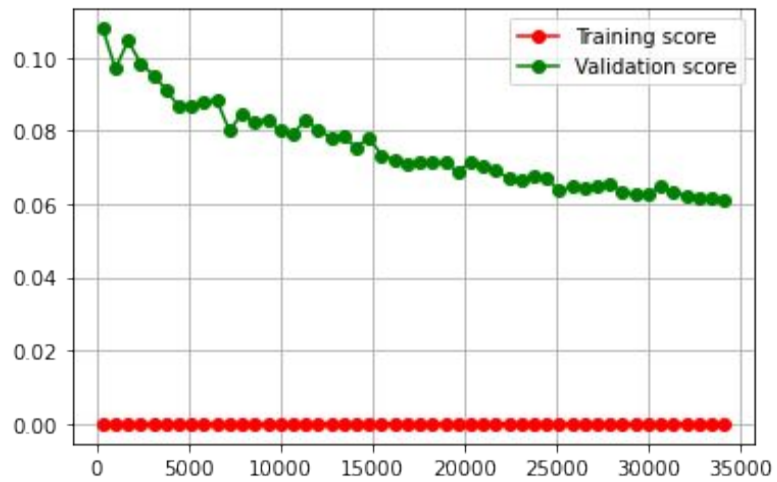
Drawn with MSE as an error



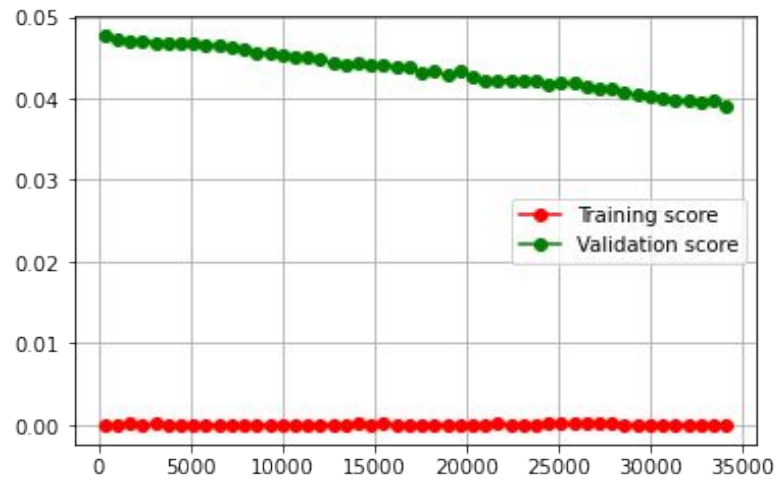
k-nearest neighbors



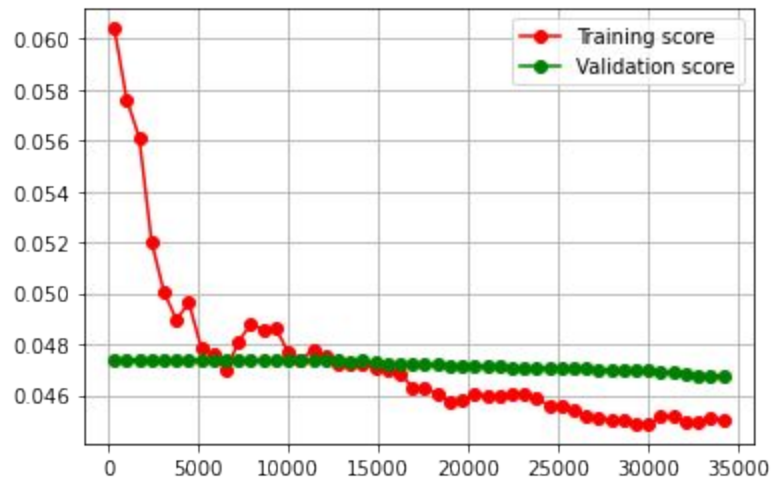
Linear logistic regression



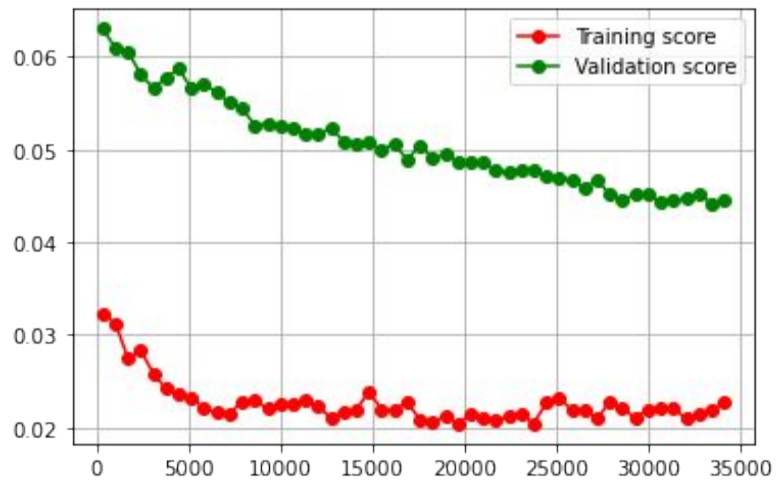
Decision tree



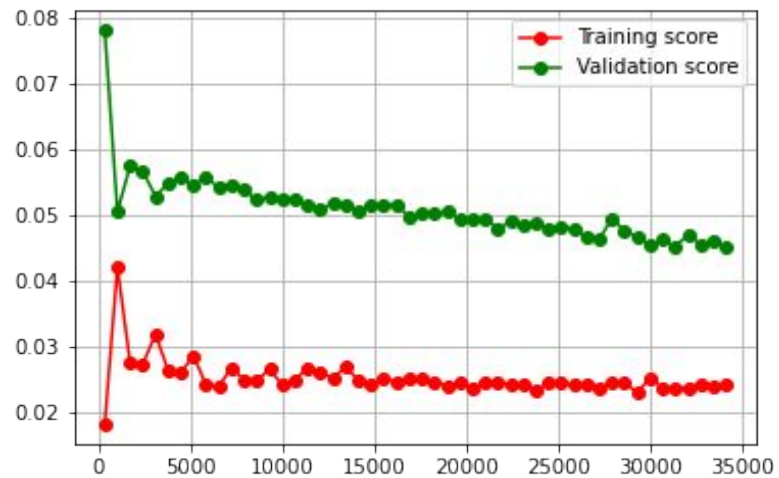
Random forest



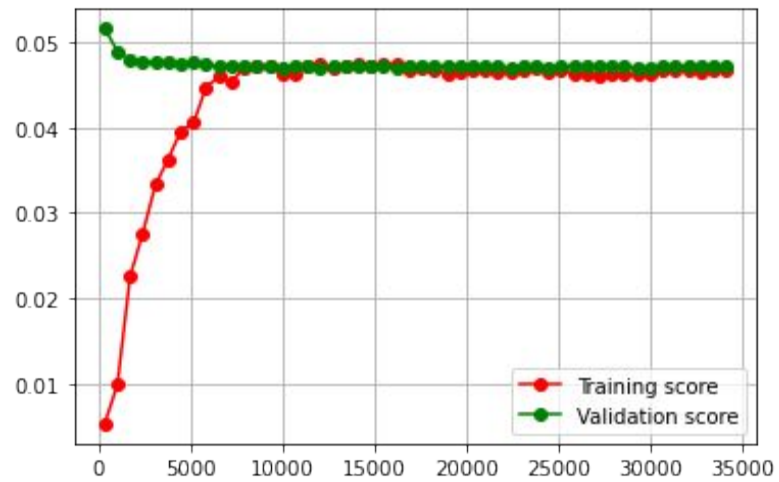
Support vector machine



Multi-layer perceptron



Keras neural network on GPU



XGBoost

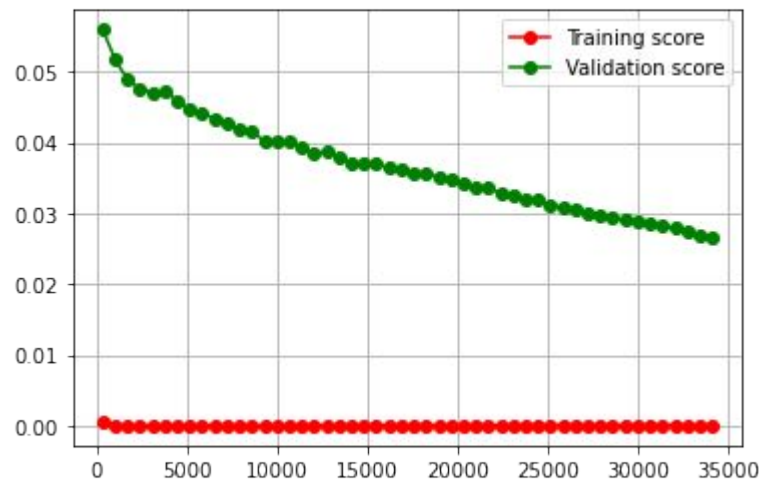
A large blue geometric shape, resembling a stylized triangle or a corner of a square, occupies the left side of the slide. It is composed of two main triangular sections meeting at a diagonal line.

3. Conclusions

The conclusions of the project

XGBoost

XGBoost is the best at predicting a company's profitability success with a F1 score of 0.62



XGBoost after parameters tuning