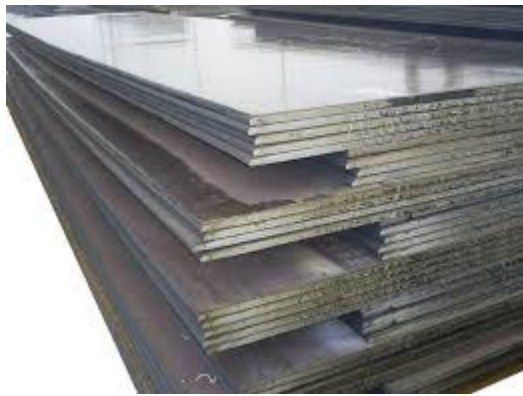


Hands on: Classifying surface defects in steel plates using Machine Learning

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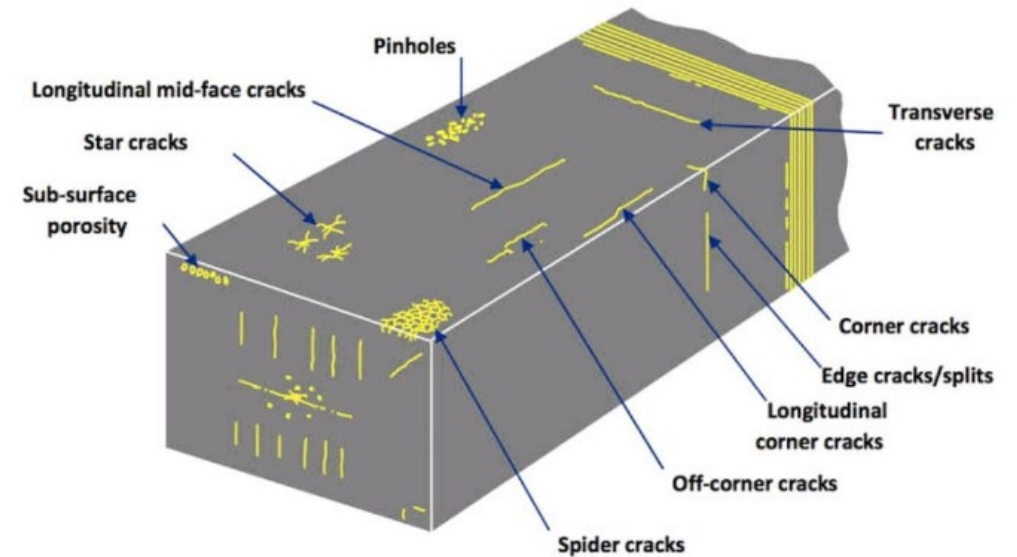
Hands on: Classifying surface defects in steel plates using Machine Learning



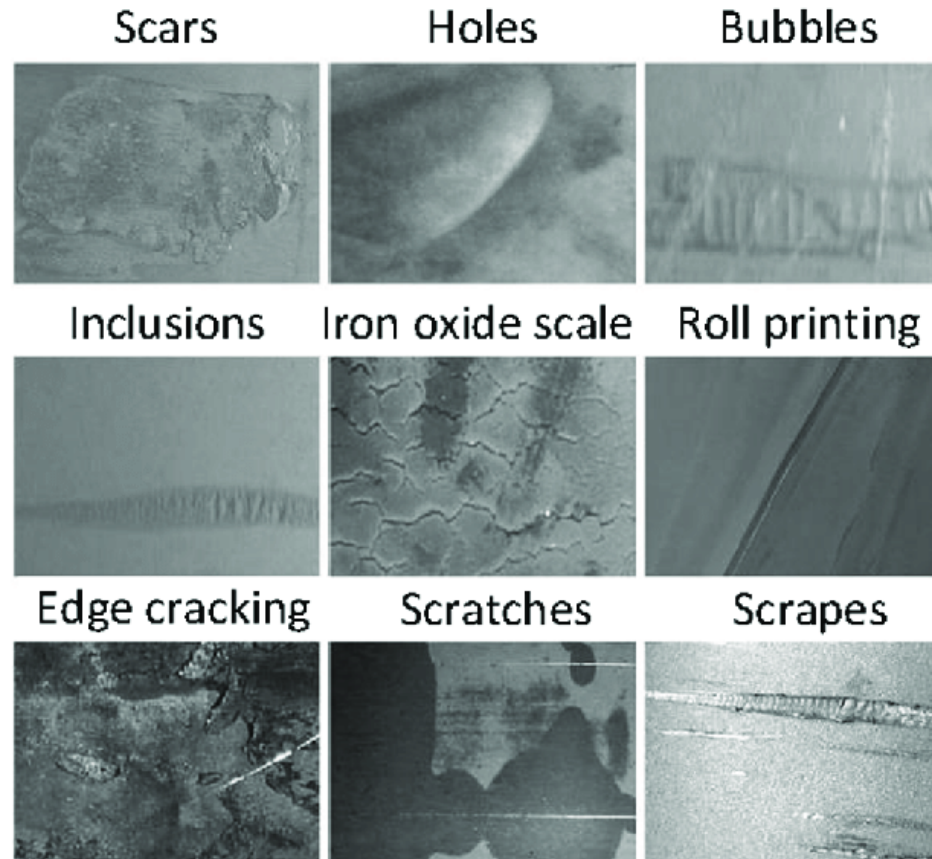
steel plates



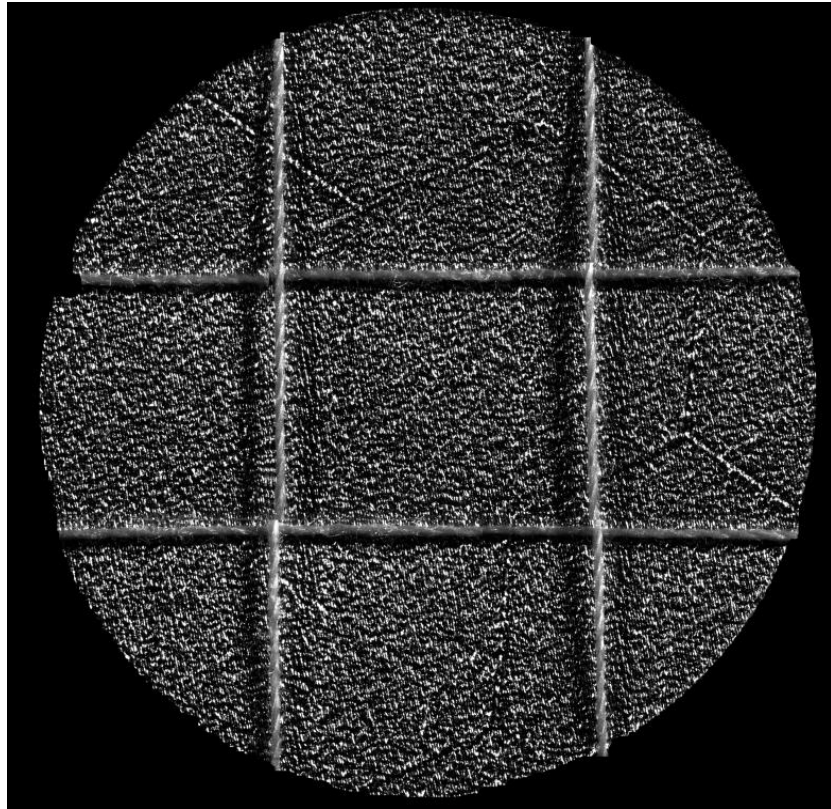
STEEL PLATE DEFECT PREDICTION



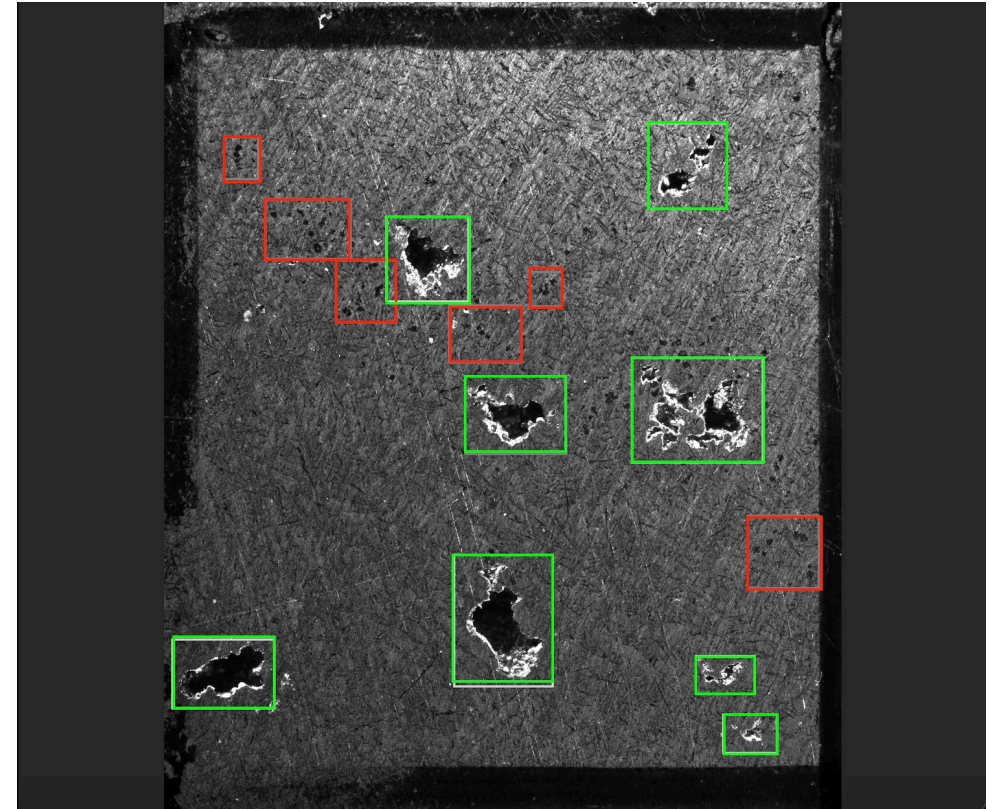
Hands on: Classifying surface defects in steel plates using Machine Learning



Hands on: Classifying surface defects in steel plates using Machine Learning



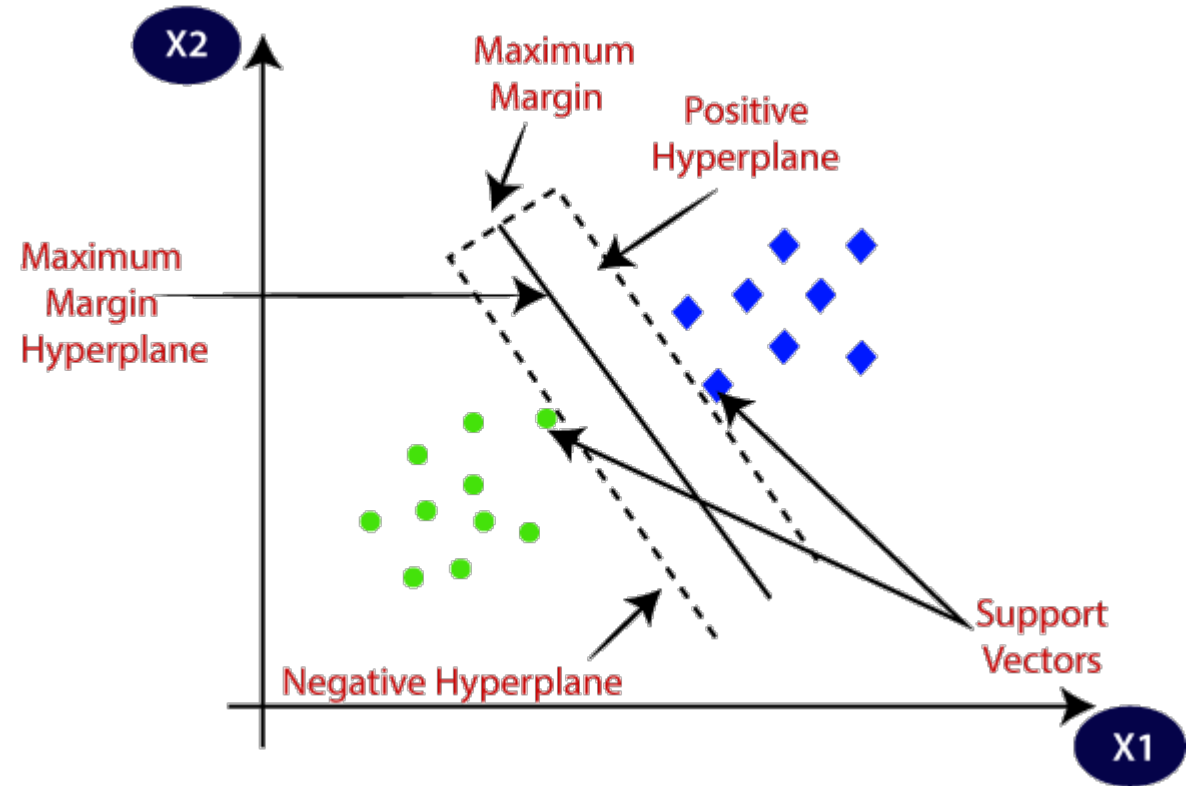
Roughness prediction



Porosity detection

Support Vector Machine (SVM)

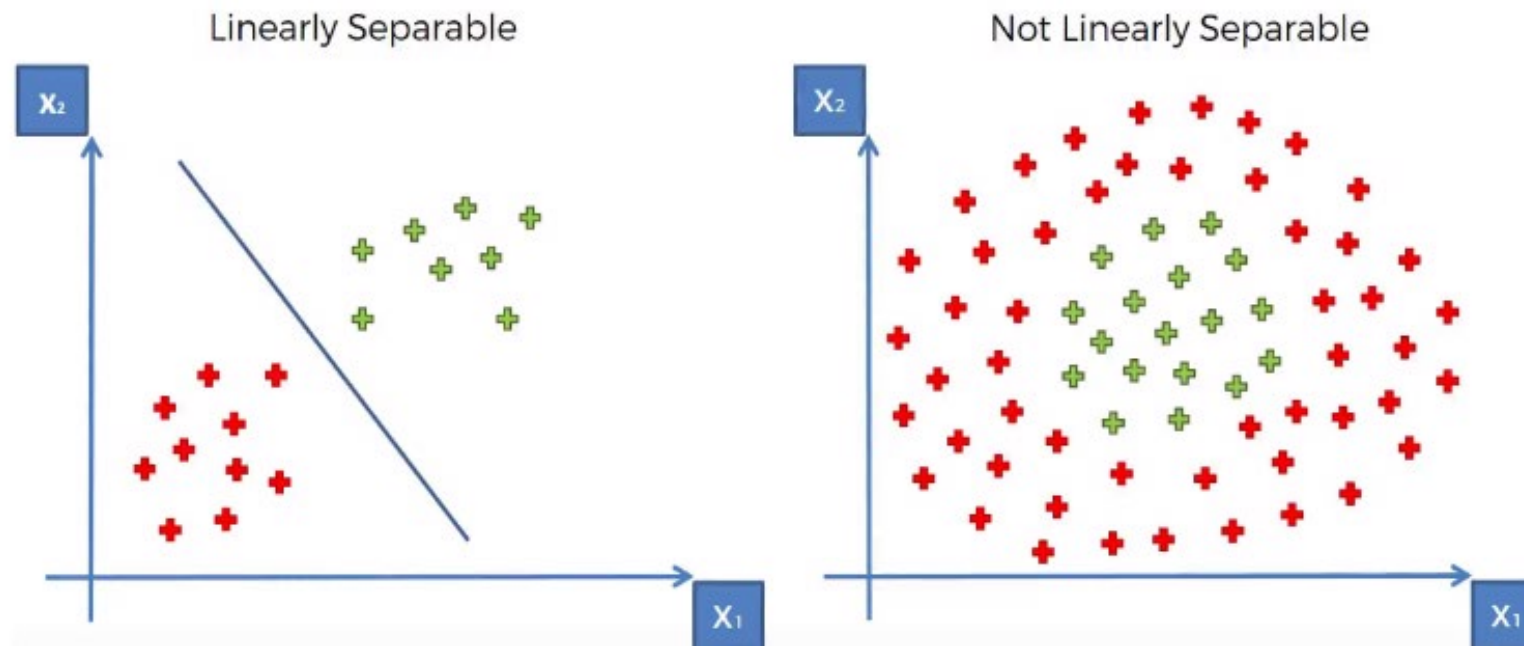
- SVM aims to find the hyperplane that maximizes the margin between different classes
- Supervised model for binary classification, regression and also multilabel and multiclass tasks



Support Vector Machine (SVM)

Kernel

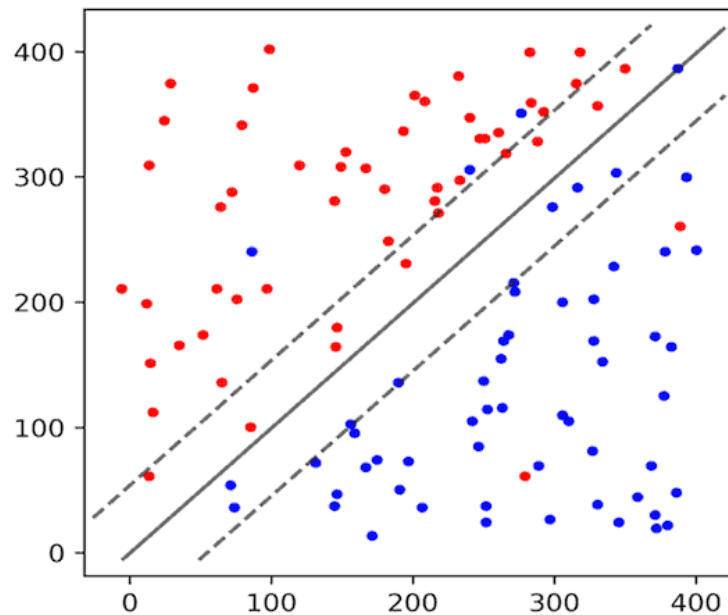
Kernel is to take data as input and transform it into the required form to make it separable



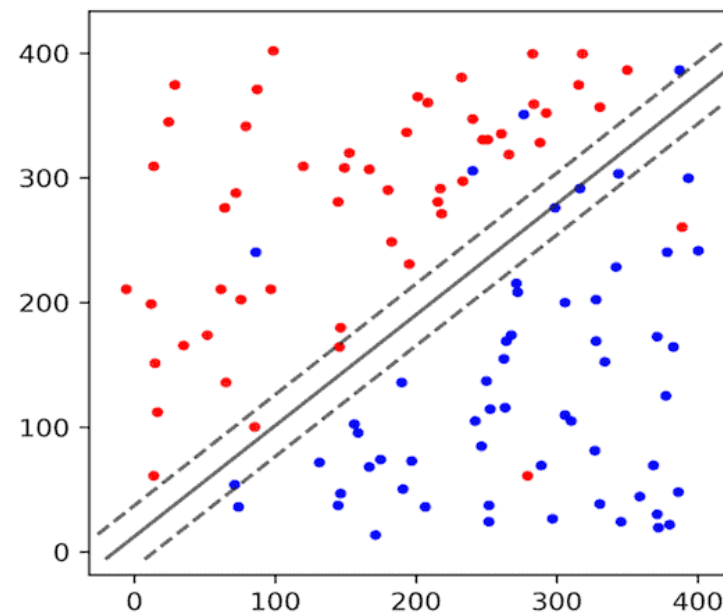
Support Vector Machine (SVM)

C parameter

The C parameter in SVM controls the trade-off between having a smooth decision boundary and correctly classifying training points. A **higher** C value may lead to overfitting

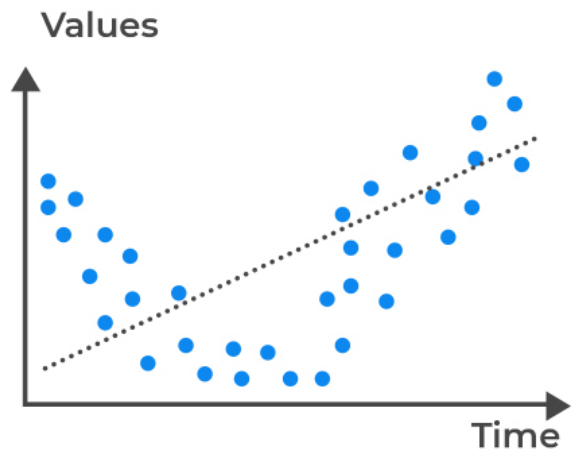


C = 1

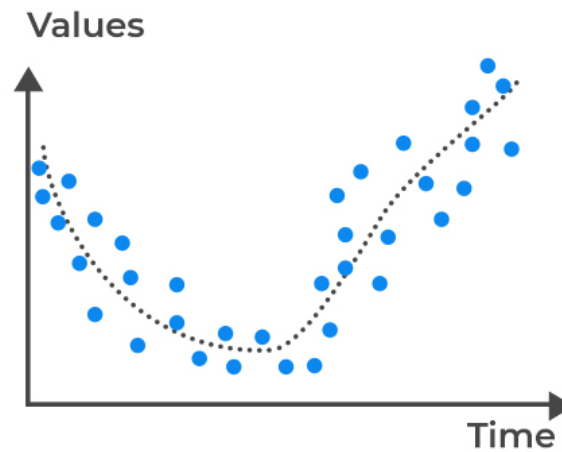


C = 100

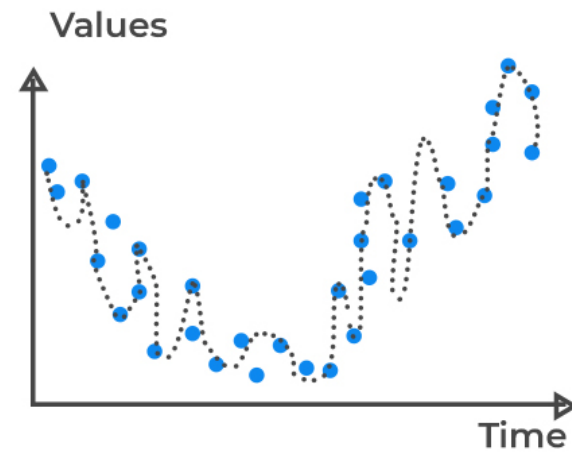
Learning Curve



Underfitted
(High bias error)



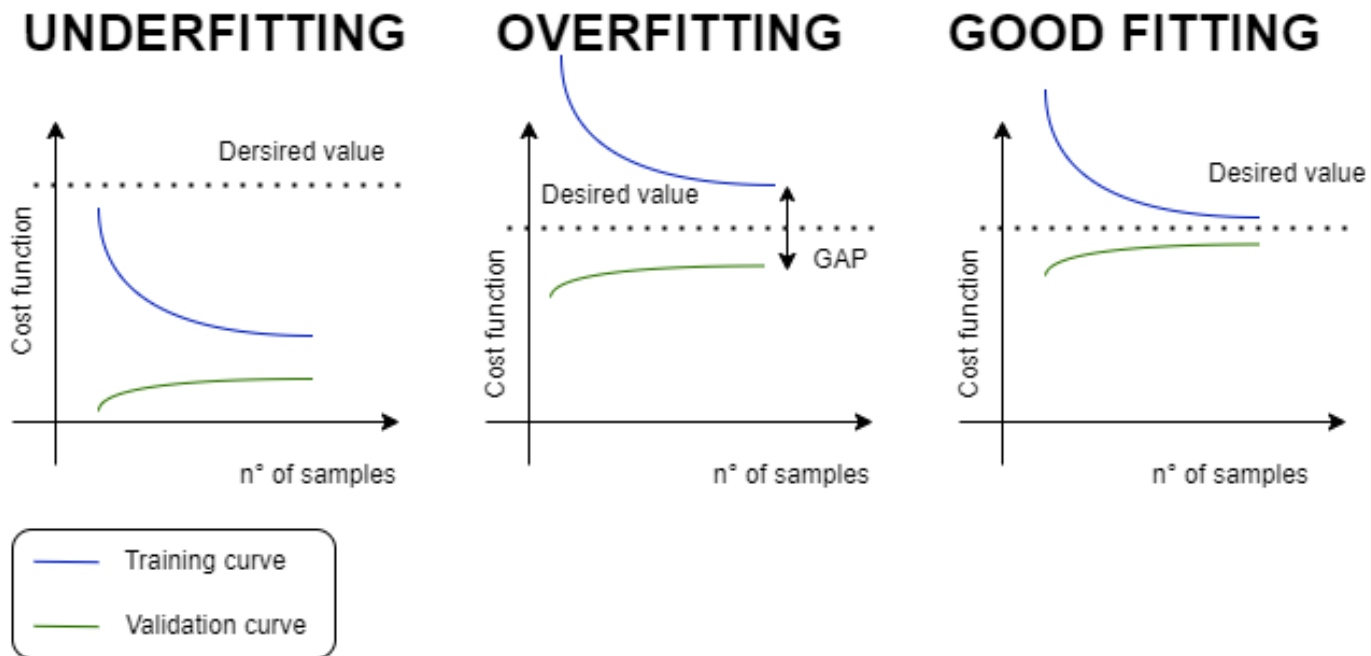
Good Fit/Robust
(Balance between bias and variance)



Overfitted
(High variance error)

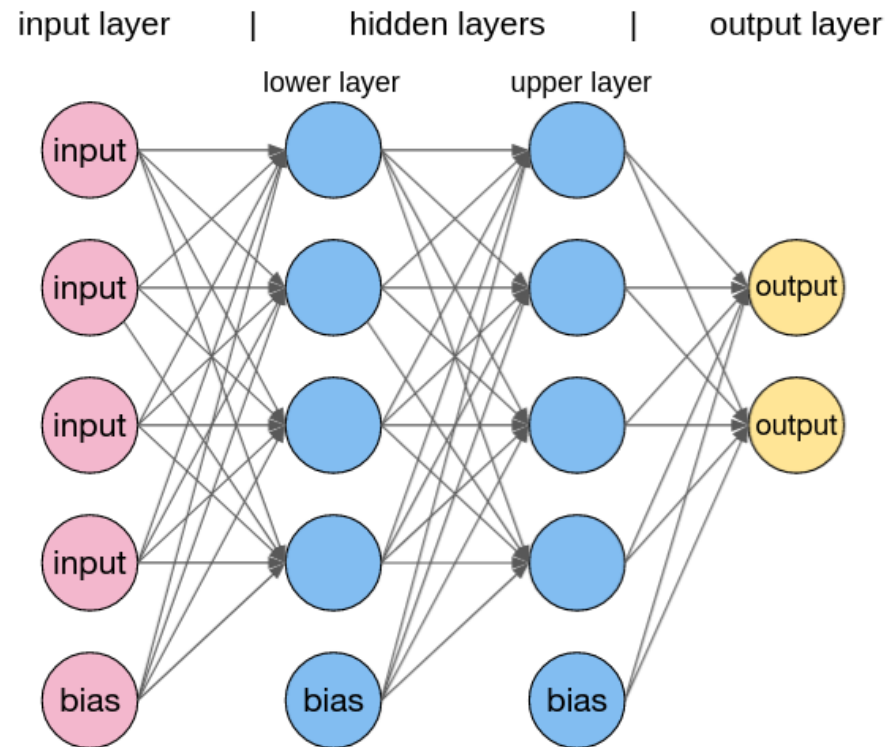
Learning Curve

Graphical representations that show how the performance of a model changes as the amount of training data increases.



MultiLayer Perceptron (MLP)

A type of artificial neural network consisting of multiple layers of neurons



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Thank you!

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