Random Forest

30 March 2024 22:36

Tree → Decision Tree.

Lots of trees → Random Forest.

job → (learning)

(model → learner)

Random Forest: It is an ensemble learning algo. → a technique that combines multiple individual model (DT) to improve the overall predictive performance or stability of the system

- that constructs many decision trees during the training.

more accurate and robust predictions.

Pros of RF model:

\# **Robustness:** stable model, less sensitive to noise and overfitting compared to individual DT.

\# **High Accuracy:** Typically RF model advices higher accuracy compared to DT.

\# **Feature Importance:** RF model provides the ranking of features which can help in feature selection and interpretation.

RF can be applied to both regression and classification problems.

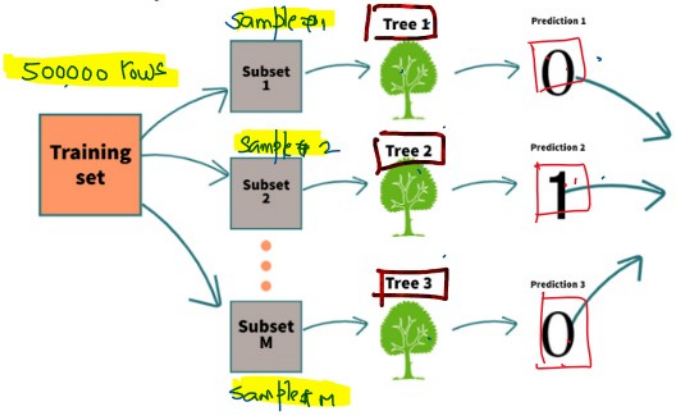
→ [Entropy
→ Pruning] → max_depth.

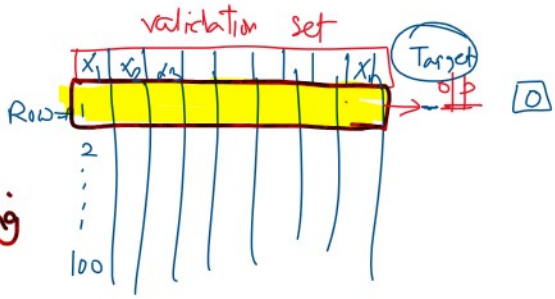
Cons of Random Forest

Model computational time is High.

Model interpretability can be less as it has multiple DT models.

Working of RF





India → 543

Feeling of RF © apc

Every MP in the parliament

⇧

DT model

MP – Bangalore – subset of India

Bill → Yes → 1
→ No → 0

543 → DT model → MP

↓

Majority

Disclaimer: Image shown above to understand RF model only.

Bagging vs Boosting

RF primarily uses a technique called "Bagging" (aggregating)

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stands for

Bootstrap Aggregating