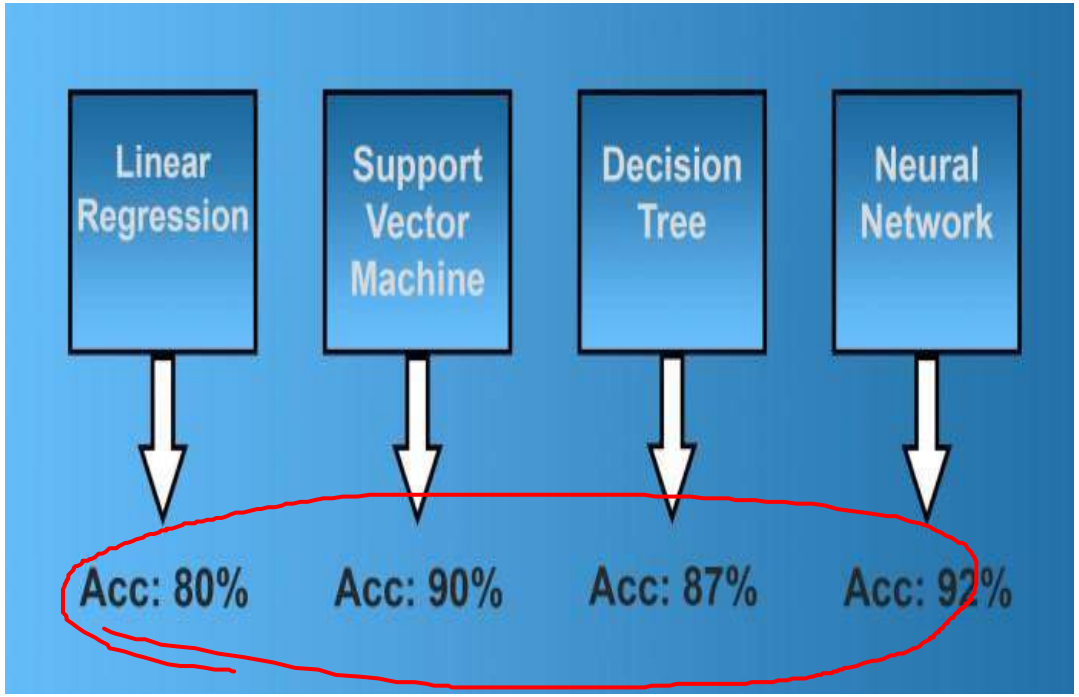
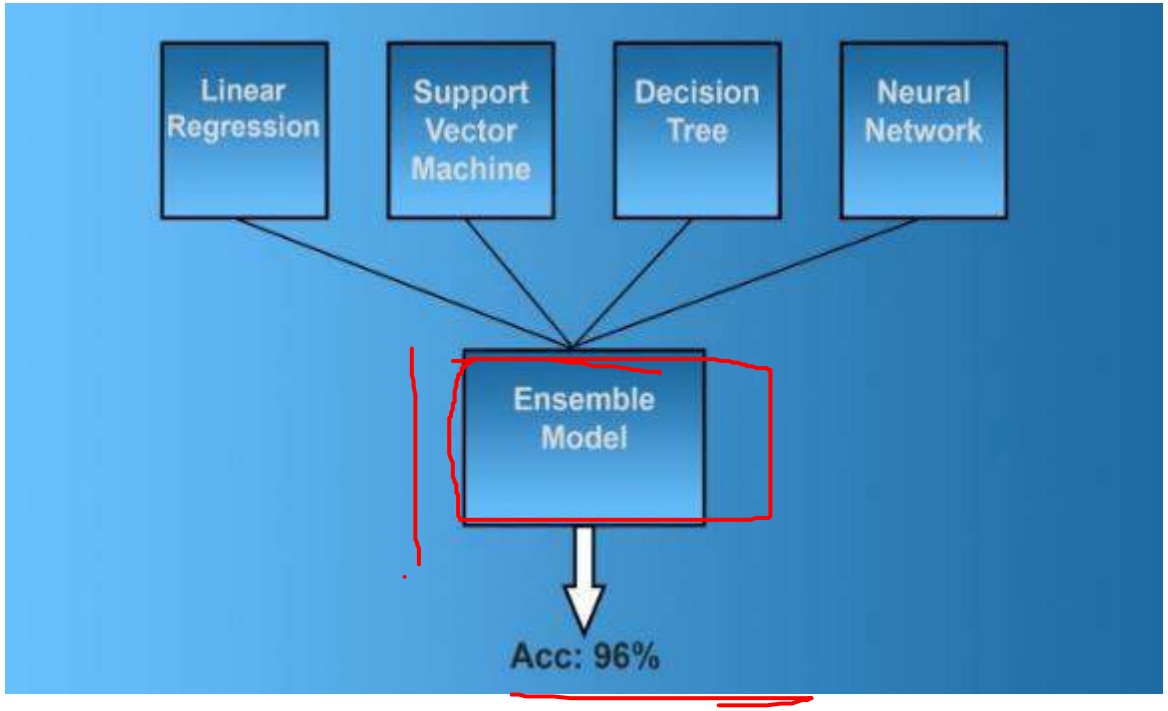
BOOSTING ALGORITHMS - REGRESSION

Ensemble Learning

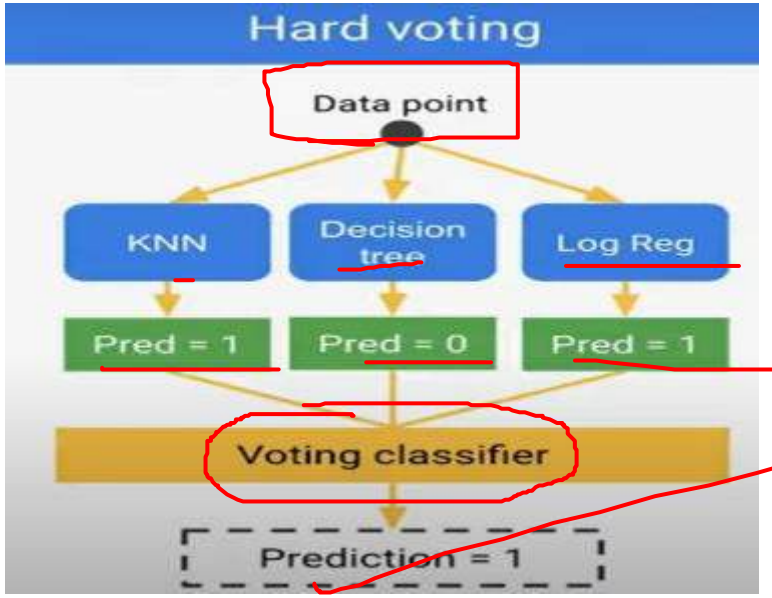




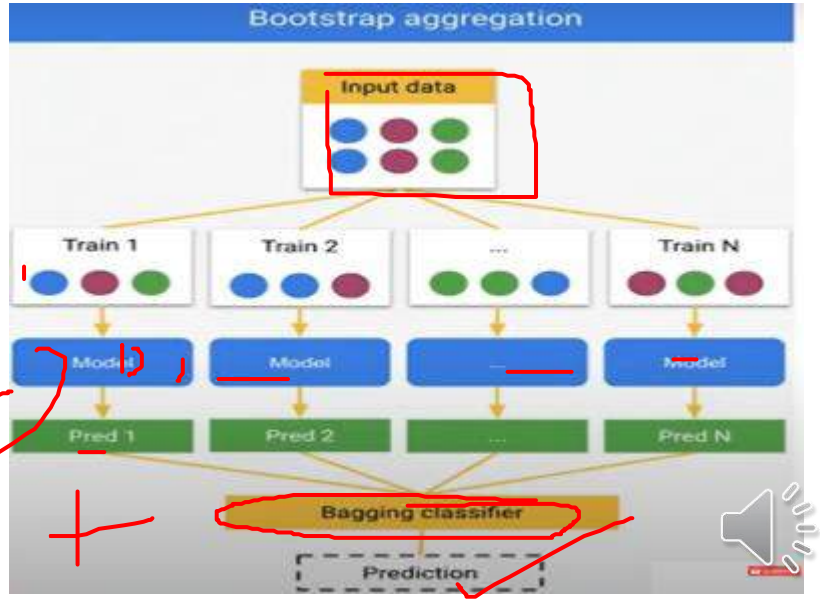
"Group of Weak Learners to Make strong Learners"

Ensemble Learning – Types of Ensemble Methods

Voting(Averaging)

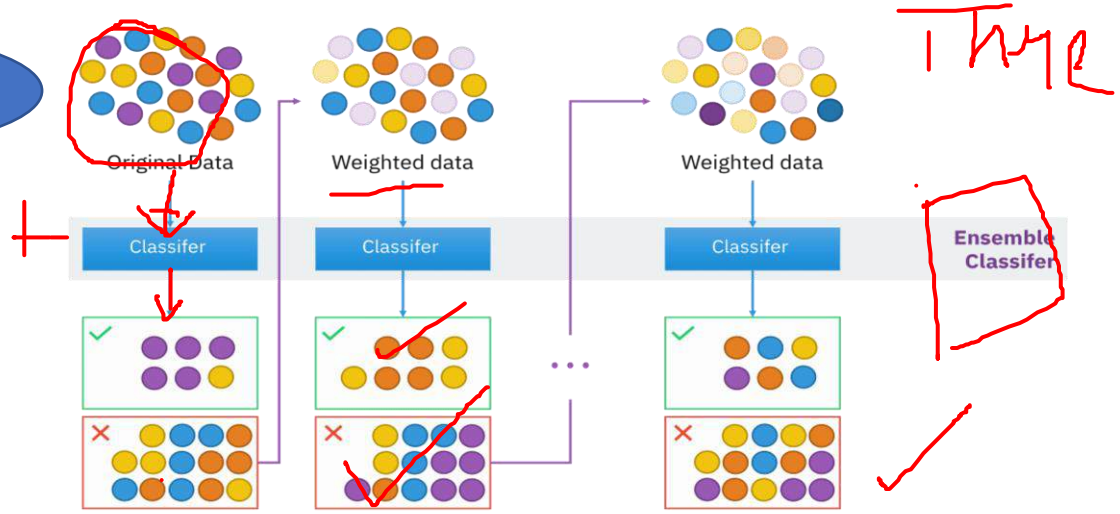


Bootstrap Aggregation (bagging)

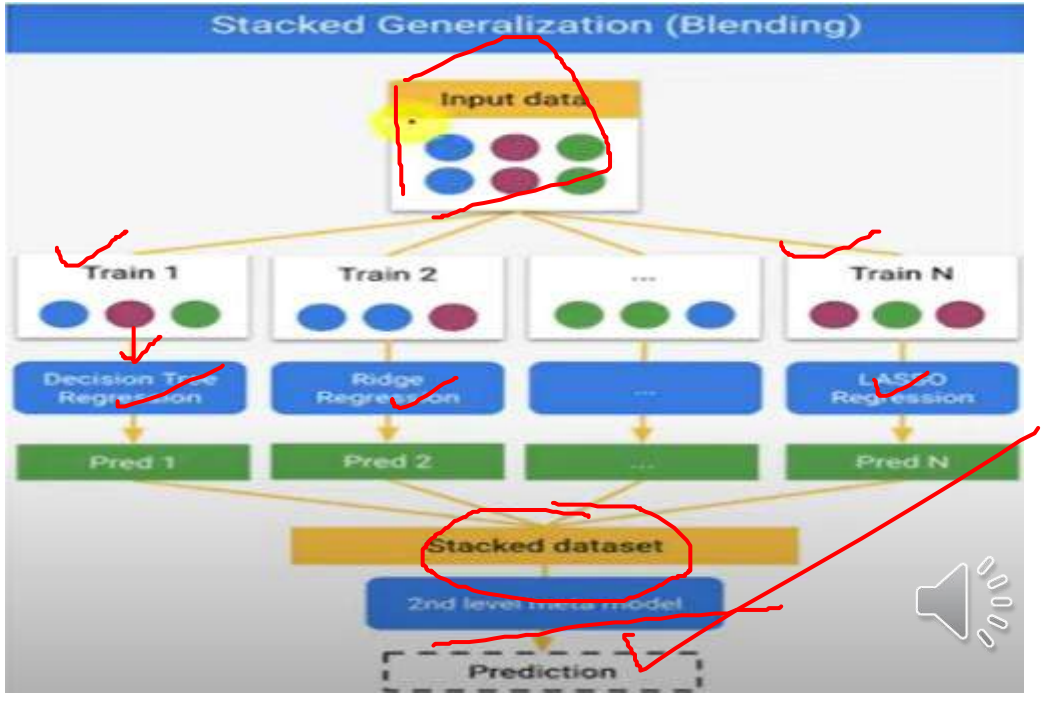


Ensemble Learning – Types of Ensemble Methods

Boosting

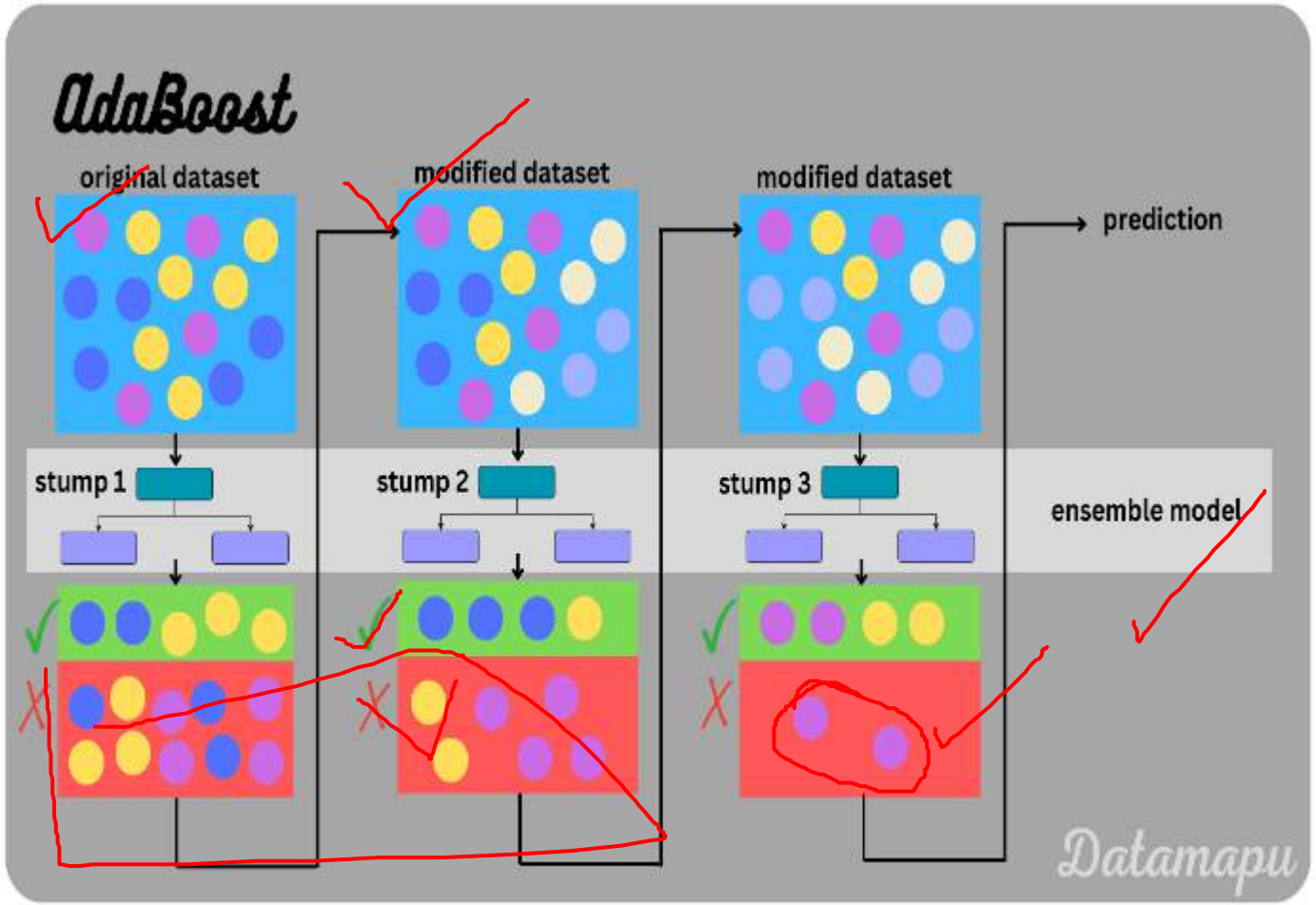


Stacked Generalization (Blending)



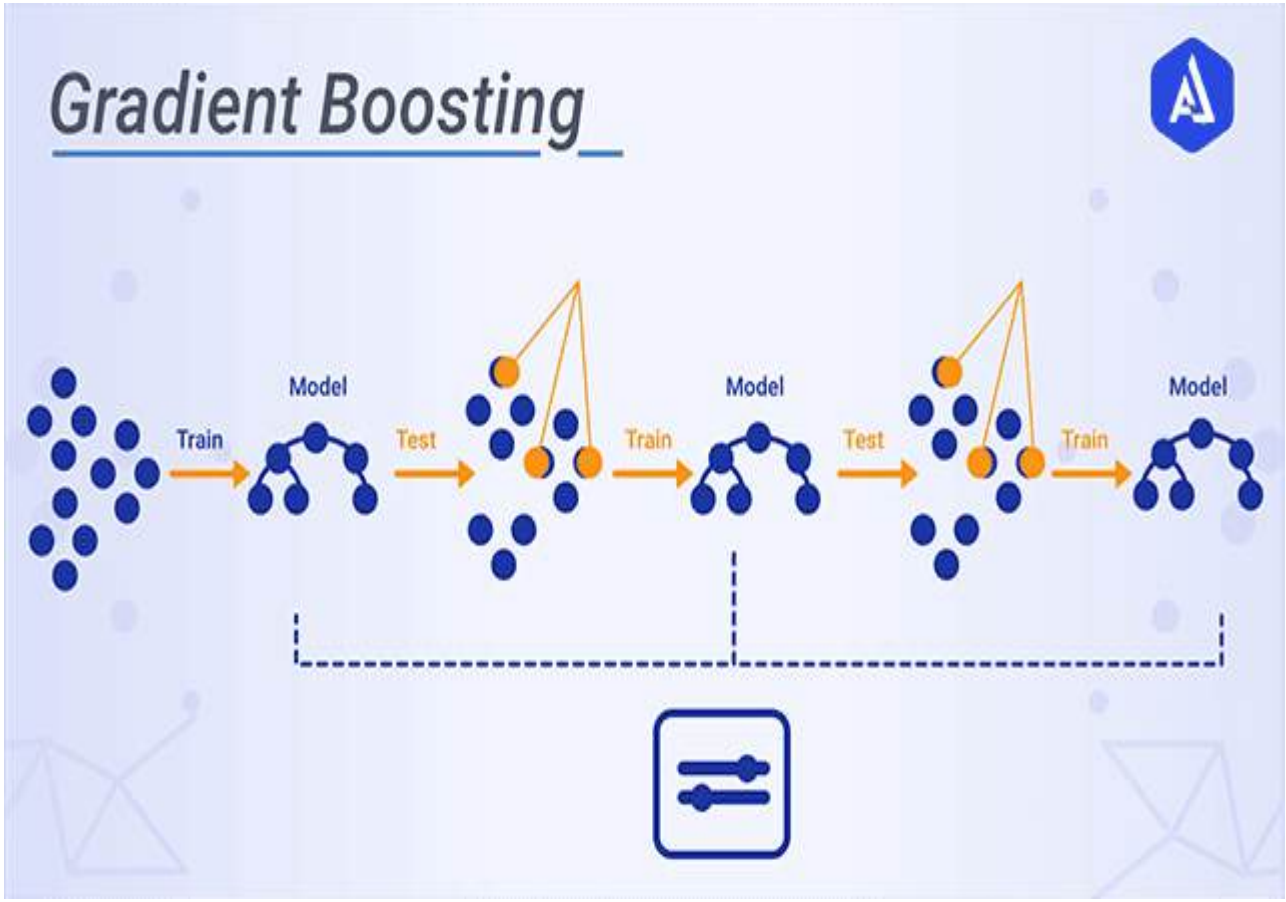
Boosting – Ada Boost

- Same as Normal Boosting
- Transform weak model into strong model
- By Giving Incremental weights concepts
- Used for both Classification and Regression



Boosting – Gradient Boost

- Only Decision Tree used
- Model improves Sequentially but not incremental weight concept
- Optimize loss function previous learner
- Additive model regularize loss function



Boosting –XG Boost

Same as Gradient boosting but has additional functionality

Distributed machine Learning process

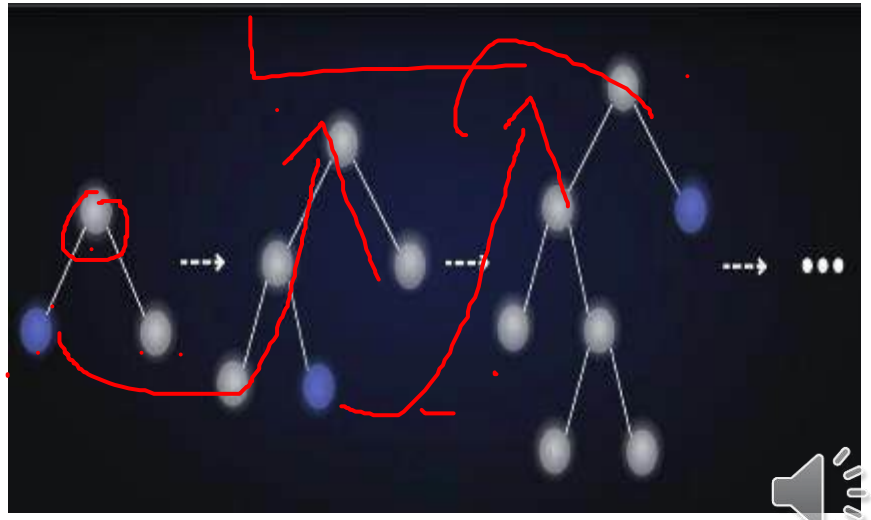
More computational speed and model efficiency

Gradient boosting sequentially slow

XG – Parallelization

Boosting –LG Boost

- Can handle Huge amount of data
- Poor in small dataset
- Histogram based method for selecting best fit
- For continuous values split up into bins or buckets



THANK YOU