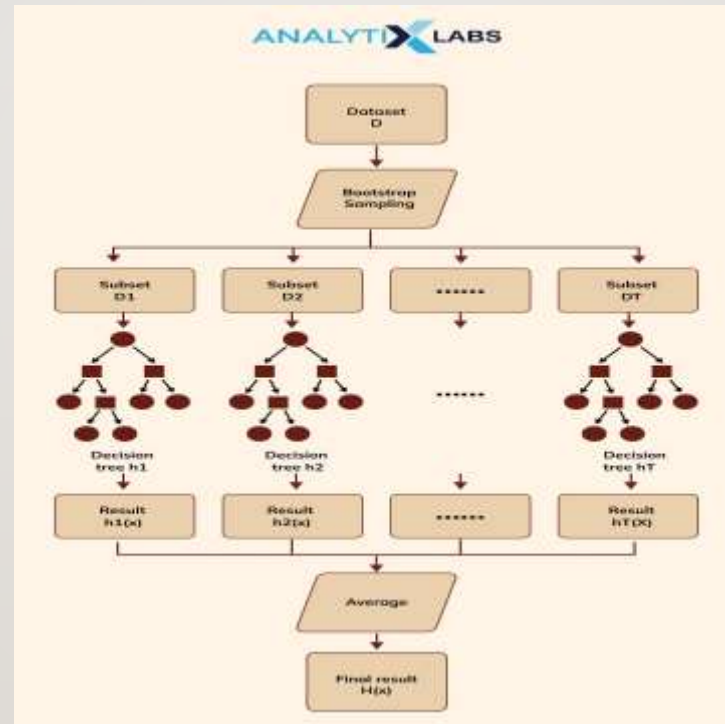


XGBOOST REGRESSION



XGBOOST REGRESSION



Principles of XGBoost Regression:

Gradient Boosting:

- Ensemble method combining weak learners to form a strong learner
- Sequentially adds models to minimize residuals of previous models

Advantages:

Performance

- High prediction accuracy
- Efficient handling of large datasets

Speed

- Optimized for parallel processing
- Uses hardware resources effectively

Flexibility

- Customizable objective function
- Supports different types of regularization

Handling Missing Data

- Automatically learns best imputation strategy

Cross-Validation

- Built-in cross-validation support



Disadvantages:

Complexity

- Requires careful tuning of hyperparameters

- Can be difficult to interpret compared to simpler models

Resource Intensive

- High memory usage

- May require significant computational power for large datasets

Sensitivity to Noise

- Can overfit if the data is noisy without proper regularization

Not Always the Best Choice

- Simpler models may perform just as well with less complexity for some problems

