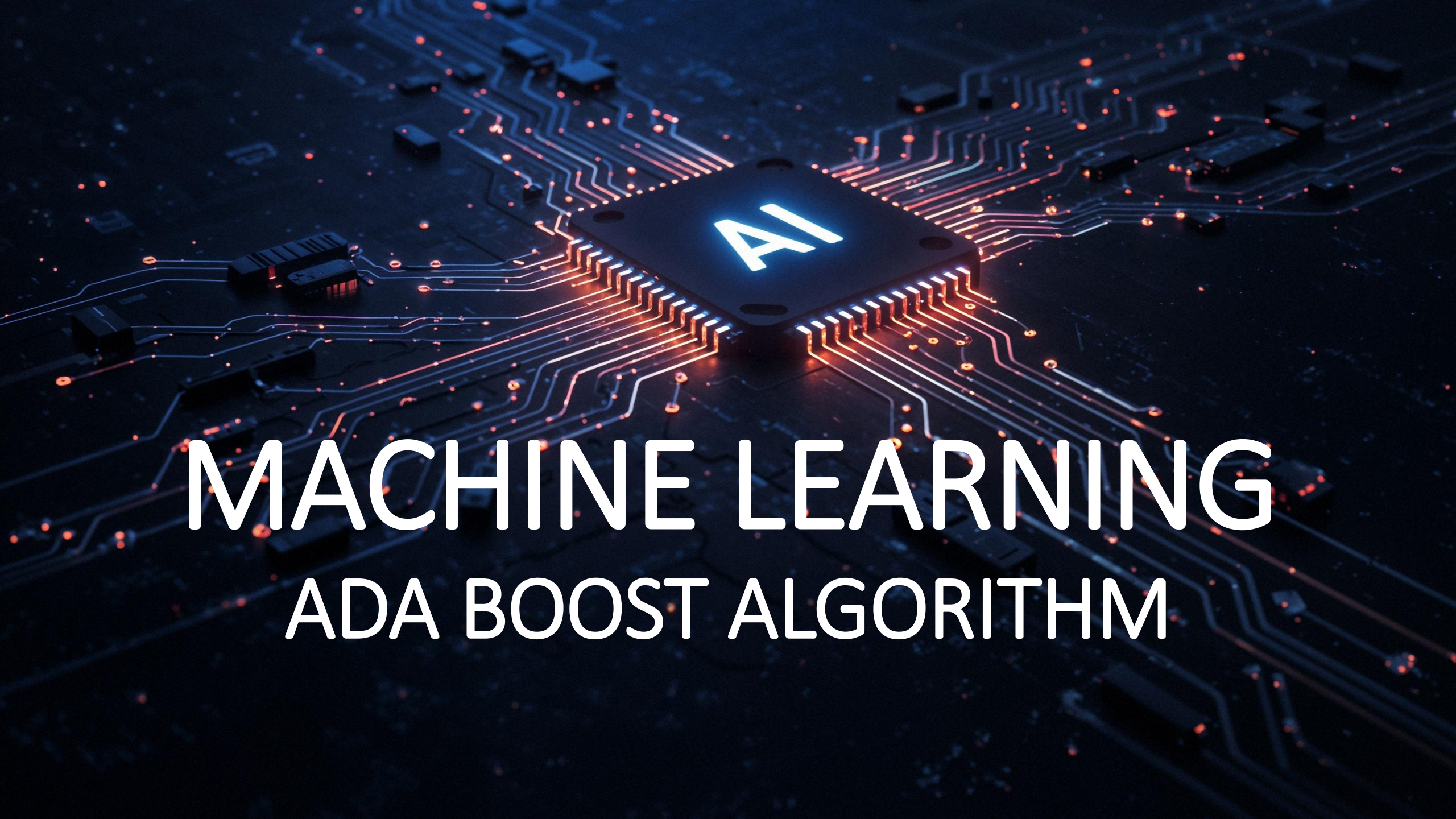
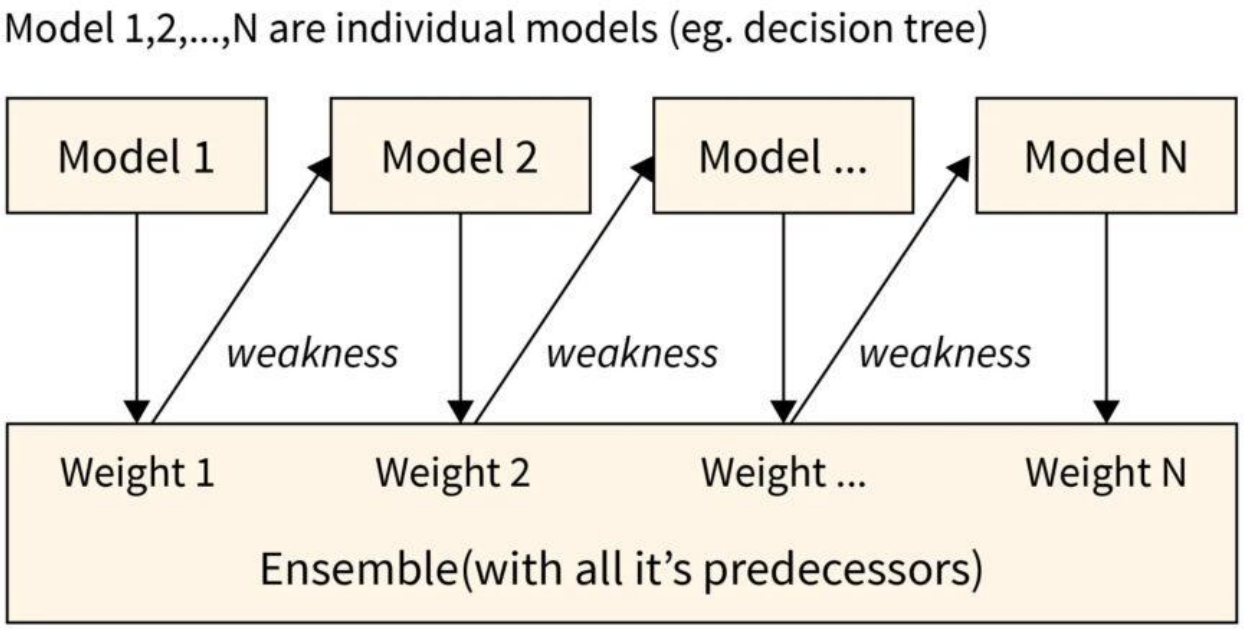


MACHINE LEARNING

ADA BOOST ALGORITHM

What is Ada Boost Algorithm?

- AdaBoost (Adaptive Boosting) is an ensemble learning method
- All weak models are combined to create a strong model
- It trains by taking datapoints that were misclassified in previous round
- This adaptation makes it effective for classification tasks



The algorithm fetches input from the dataset and previously misclassified data to create a new model. This repeats to create n-number of models

How Does Ada Boost Work?

- **Initialize Weight**: equal weights are assigned to all the data points
- **Train Weak Learner**: first weak learner datasets are trained
- **Calculate Errors**: based on the sample that weak learner misclassified
- **Adjust Weights**: increases the weight of misclassified sample
- **Iterate**: train new weak learner focusing misclassified samples
- **Final Model**: accuracy driven training creates strong model

Advantages of Ada Boost

- Improved Accuracy
- Error Adaptability
- Easy to Implement
- Handles Imbalance Datasets

Disadvantage of Ada Boost

- Sensitive to Noisy Data
- Intensive Computation
- Over fitting