

# PH-227

## AI and Data Science

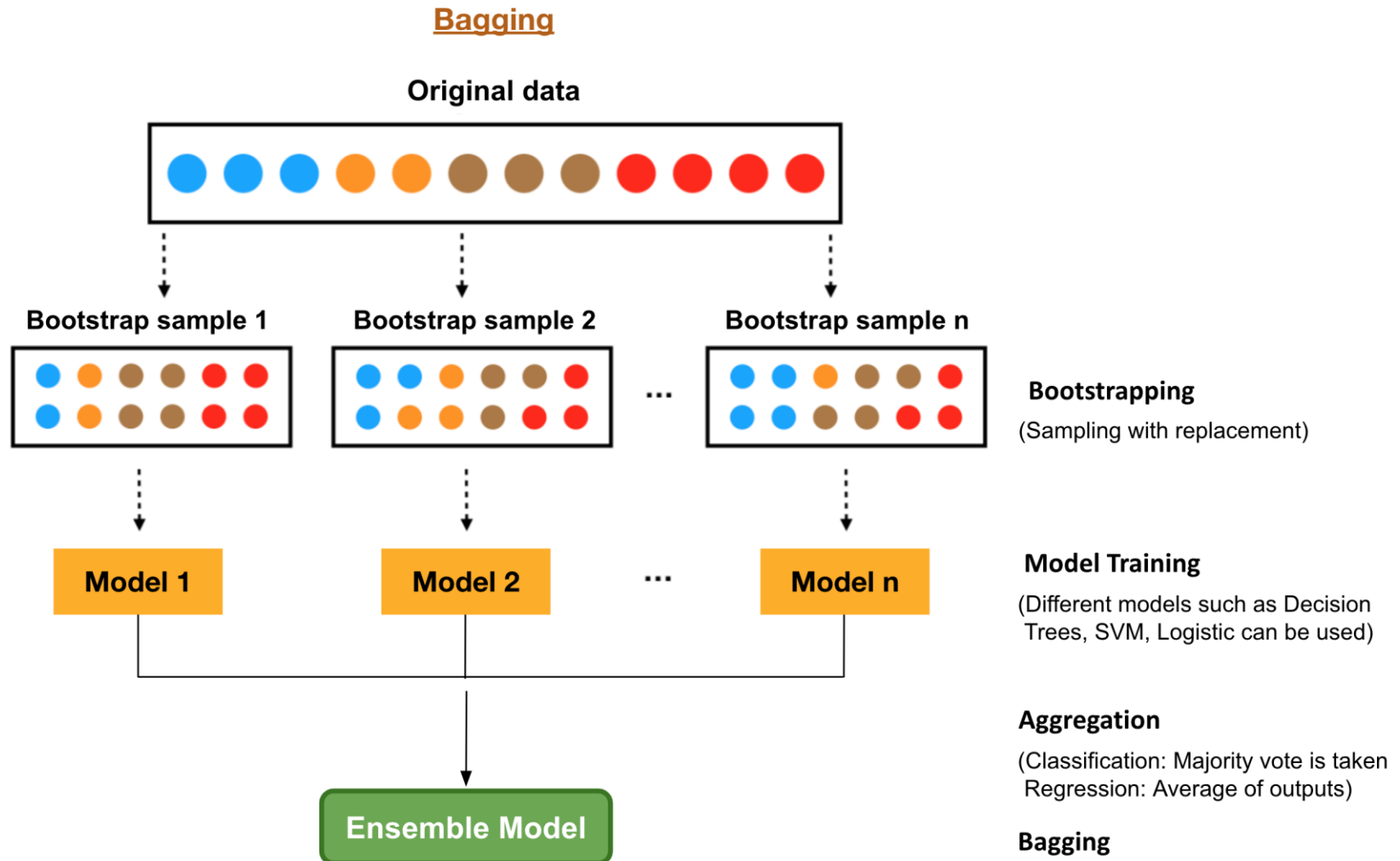
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- Aftab Alam
  - Email : [aftab@iitb.ac.in](mailto:aftab@iitb.ac.in)
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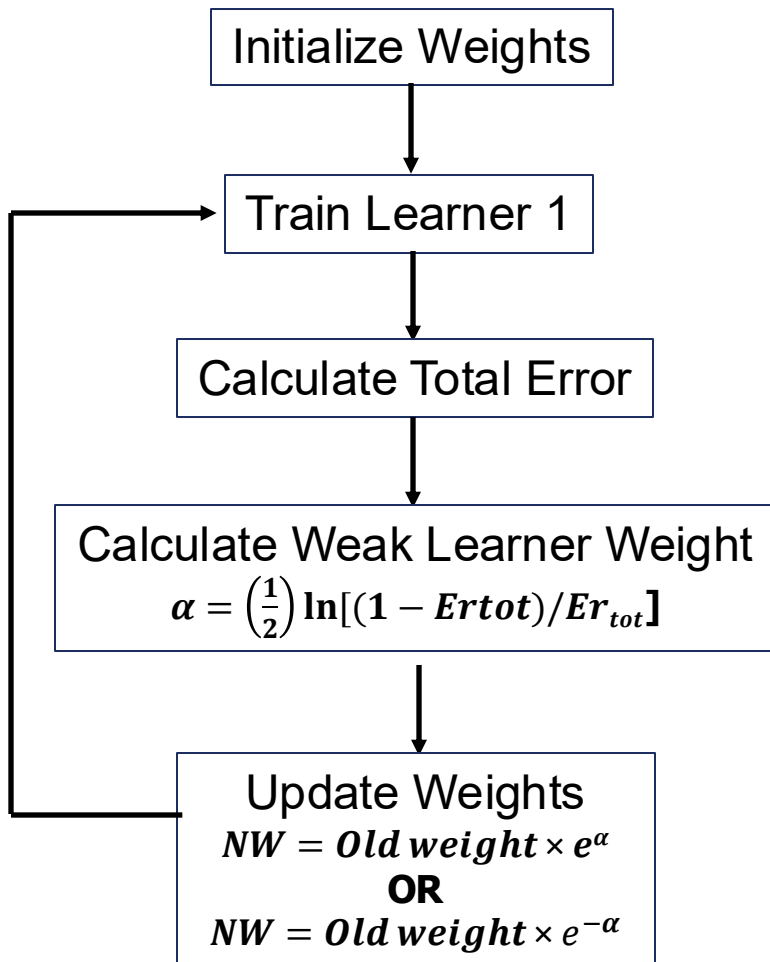
TAs:

Yashowardhan, Divyansh, Matam, Peela, [Piyush](#)

# Bagging/Bootstrap Aggregating



# Weights in Boosting Ensemble Learning!

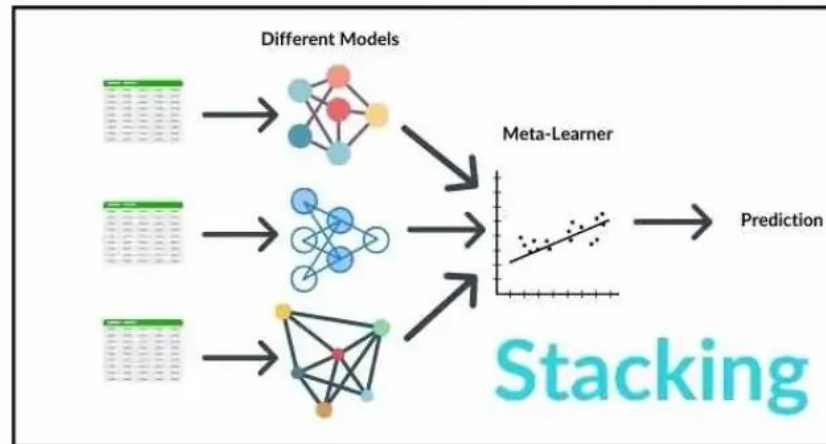
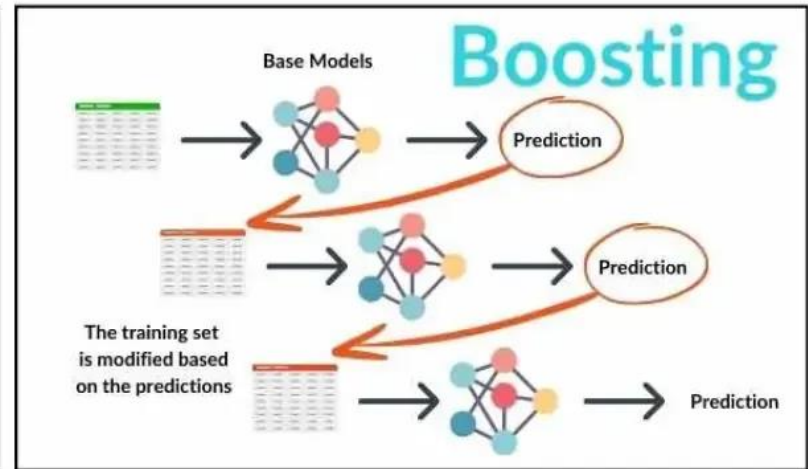
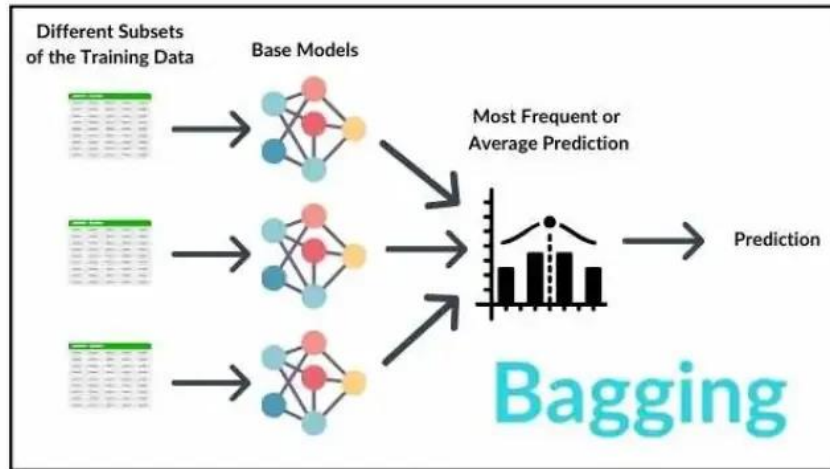


Data point	X	Y	Weights
1	100	45	1/5
2	300	47	1/5
3	700	54	1/5
4	800	78	1/5
5	900	90	1/5

$$Er_{tot} = 1/5 + 1/5 = 2/5$$

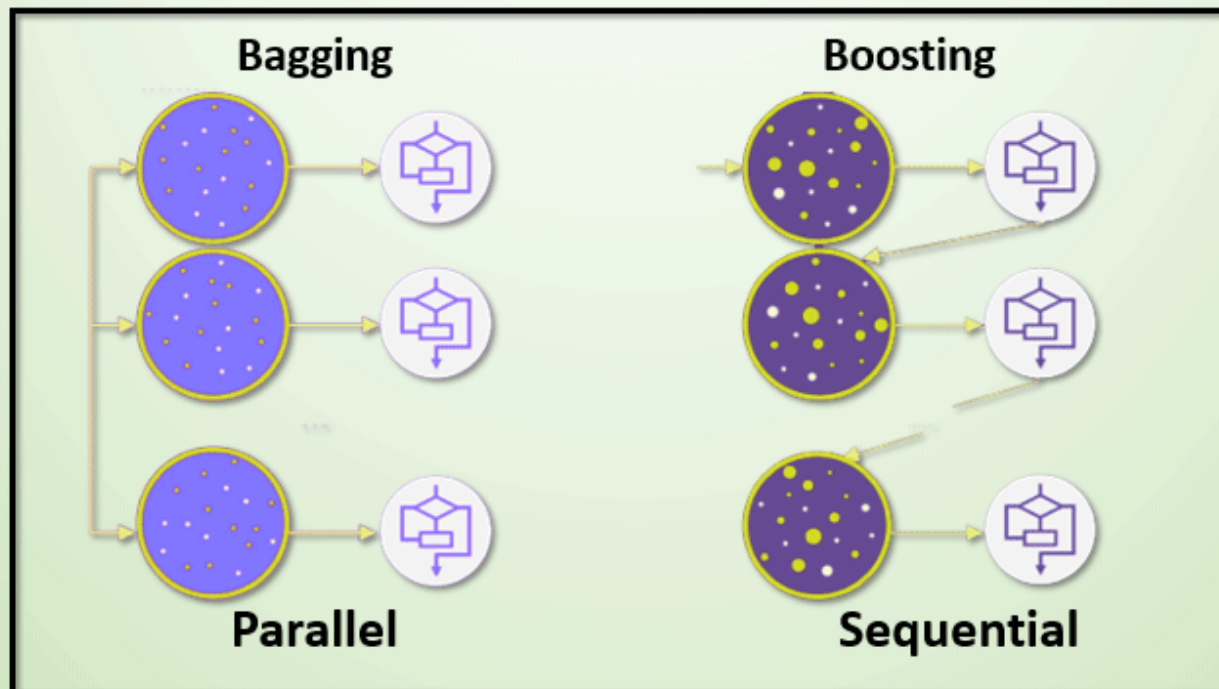
$$\text{Updated Weights} = (1/5) * e^{0.2}$$

# Ensemble Learning (Bagging, Boosting & Stacking)



# Ensemble Learning (Bagging, Boosting)

## Bagging and Boosting



[www.educba.com](http://www.educba.com)

# Cross Validation

- Cross validation is a resampling technique
- It helps to estimate how well a model will perform on an independent dataset

## K-fold method

12	8	13	16	11	20	7	17	10	4	18	15	2	4	14	19
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