PadhAI: Probability Theory

One Fourth Labs

True and Predicted Distribution

What are true and predicted distributions

1. Consider the above example

G	P(G=g) (y)	(ŷ)
A	0.1	0.2
B	0.2	0.3
C	0.7	0.5

2. Here, y refers to the true distribution, or the actual probabilities for each value of G
3. And ŷ is the predicted distribution, or what we estimate the probabilities to be based on our observations
4. To measure the degree of correctness of our predictions, we can use a loss function.
5. However, Squared-error function might not be appropriate as it doesn't factor in some of the basic assumption of probability theory, ie P(G) >= 0 and <= 0, etc
6. So, we must select a different loss function that is more rooted in probability theory (Cross Entropy)