

CSE445 / L-17 / 23.07.2025 /

## Midterm Exam

L-18 / 28.07.2025 /

### ⊗ Binomial Distribution:

$$P(k) = \binom{n}{k} p^k q^{n-k} = \frac{n!}{(n-k)! k!} p^k \cdot q^{n-k}$$

Here,

$n$  = number of trials.

$k$  = number of success desired

$p$  = probability of getting success in one trial.

$$q = (1-p)$$

### ⊗ High bias for low variance:

- bias tree amount high (80%)
- variance tree amount low (20%)

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### \* k-means:

- $\Rightarrow x_i \Rightarrow$  initial points of data
- $\Rightarrow c_i \Rightarrow$  initial means
- $\Rightarrow a_i \Rightarrow$  new assignments will change the means and points position.

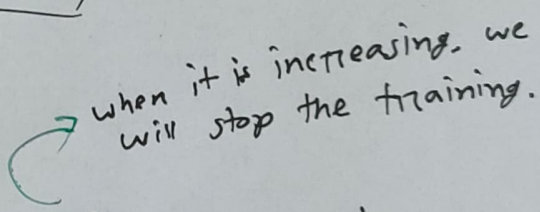
L-20 / 04.08.2025 /

VZVA

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### \* k-means:

- optimized, means plot (Like a validation curve)

 Elbow method, optimization of k-means.

when it is increasing, we will stop the training.

$\Rightarrow$  Each steps calculate the variance, when it is not decreasing or reach the threshold attempts, it will trigger the early stop.

### \* k-means

~~Agg~~ Agglomerative Cluster } Unsupervised.  
kNN



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Random surprise Quiz

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⊗ Reinforcement Learning.

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Final Syllabus

Ch - 7, 8, 9, 10

Final Exam

26.08.2025