

02/04/25

# LAB - 04 KNN Classification

Q1. Consider the following dataset  $k=3$   
Test data  $(X, 35, 100)$  as  $(Person, Age, salary)$

Person	Age	Salary	Target	Distance	Rank
A	18	50	N	52.81	5
B	23	55	N	46.52	4
C	24	70	N	31.96	2
D	41	60	Y	40.45	3
E	43	70	Y	31.06	1
F	38	40	Y	60.06	6
X	35	100	?		

For person A, Distance =  $\sqrt{(35-18)^2 + (100-50)^2}$   
= 52.81

For person B, Distance =  $\sqrt{(35-23)^2 + (100-55)^2}$  = 46.52

person C, distance =  $\sqrt{(35-24)^2 + (100-70)^2}$  = 31.96

person D, =  $\sqrt{(35-41)^2 + (100-60)^2}$  = 40.45

For  $k=1$ , target = Y

$k=2$  target = N

$k=3$  target = Y

max  $(k_1, k_2, k_3) = Y.$

$\therefore$  For test data  $(X, 35, 100)$  target = Y



