
You are screen sharing
Stop share
Rahul Tripathi
H
Harika Prathipati
⇒ line (ML DL → AI)
data
line
Θ
i) C.S.
ii) income
→ plot
Yellow
white
white
c.s.
income
line
Decision surface
Y-intercept
m
line
New action
general equation of
line
Equation of line → Y = mx + c
slope
m = tanθ
ax + by + c = 0
1/1

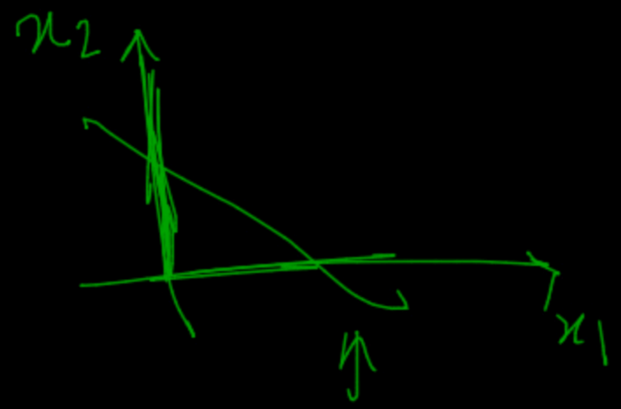
$ax + by + c = 0$

$by = -ax - c$

$y = \left(-\frac{a}{b}\right)x - \frac{c}{b}$

$m = -\frac{a}{b}$

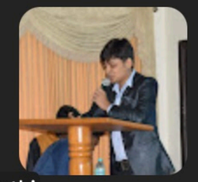
$\frac{c}{b}$ → Intercept



a, b → w_1, w_2 → coeffⁿ

c → w_0 ← y-intercept

$w_1 * x_1 + w_2 * x_2 + w_0 = 0$



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You are screen sharing
Stop share
min error
Best line
error
min
ML
Best
line → w1 w2 w0
weight vector
[w1 w2 w0]
l2
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3 / 3

$$w_1 * x_1 + w_2 * x_2 + w_3 \cdot x_3 - \cdots + w_n x_n + w_0 = 0$$

$$\begin{bmatrix} w_1 \\ w_2 \\ w_3 \\ \vdots \\ w_n \end{bmatrix} \begin{bmatrix} x_1 & x_2 & x_3 & \cdots & x_n \end{bmatrix} + w_0 = 0$$

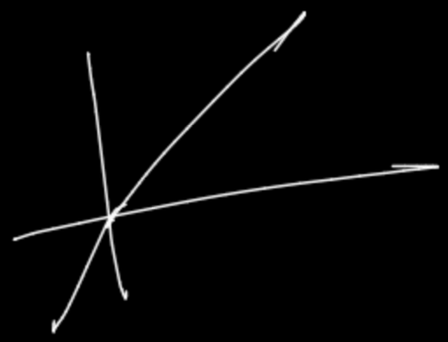
equation of Hypoplane

$$w^T \cdot x + w_0 = 0$$

$$w_0 + \sum_{i=1}^{n} w_i x_i = 0$$

(pN)

units



$\Pi_n : w^T x = 0$

$\Rightarrow$ Distance b/w points to plane

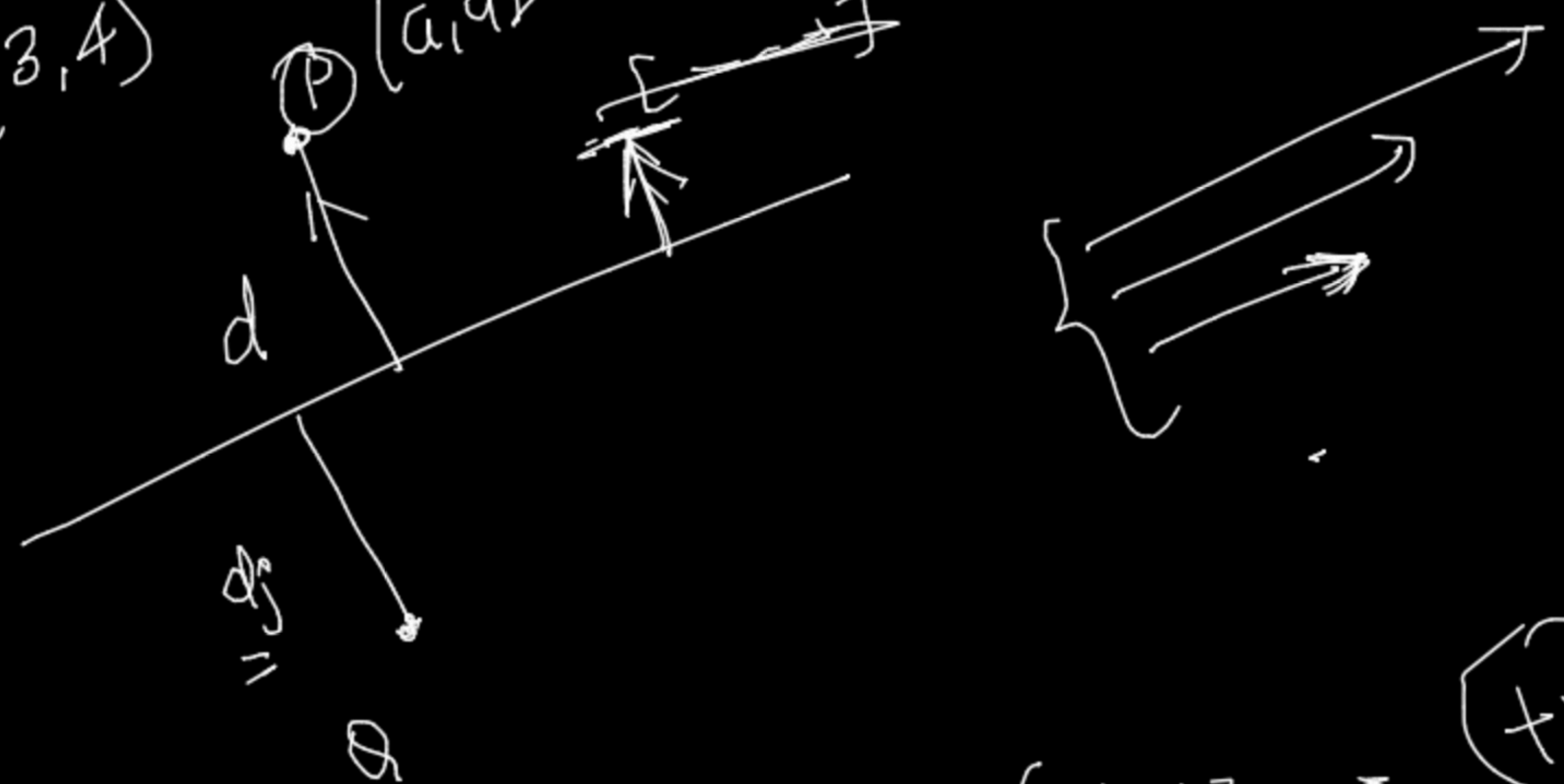
$[2, 3]$

$w_1 \ w_2$

$p(3,4)$ $P(a_1, a_2, \ldots a_n)$

$w^T x = 0$

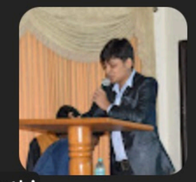
$(w)_{n \times 1}$



$$d = \frac{w^T x}{\|w\|} \Rightarrow \frac{3*2 + 4*3}{\sqrt{4+9}} \Rightarrow \frac{6+12}{\sqrt{13}} \rightarrow +ve$$

$$d_j = \frac{w^T x_j}{\|w\|} < 0$$

(w) & x_j a —



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