Silhouette Score/Coefficient

→ Metrics for clustering algorithms.

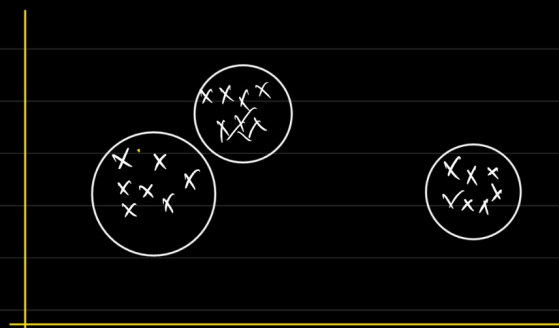* When we will say, a given cluster is a good cluster?

→ Within cluster datpoints are compact
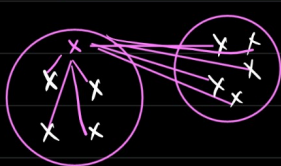
tightlypacked.

↓

WCSS (within cluster sum of square distance should be minimum) (intra cluster distance)

→ Outside cluster sum of square should be as maximum as possible (OCSS) from nearest cluster

(inter cluster distance)
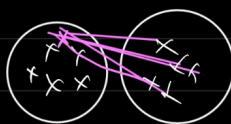
↳ Separable clusters / good cluster.

① WCSS

for $dp(i)$ belonging a cluster I is given by

$\Rightarrow$ $a(i)$ = distance within cluster wrt to each dP

② OCSS → distance from nearest cluster dps'

$b(i)$

③ Silhouette Score

$$S(i) = \frac{b(i) - a(i)}{\max(a(i), b(i))}$$

i is any dp

$\downarrow$

$\underline{\underline{-1 \text{ to } 1}}$

{ More near to 1   better the
  Clustering model
  is created }