

DISTANCE MEASURES

Given two points A and B with coordinates $(X_{1A}, X_{2A}, \dots, X_{nA})$ and $(X_{1B}, X_{2B}, \dots, X_{nB})$.

Euclidean Distance (2-dim):

$$ED_{AB} = \sqrt{(X_{1A} - X_{1B})^2 + (X_{2A} - X_{2B})^2}$$

Euclidean Distance (n-dim):

$$ED_{AB} = \sqrt{\sum_{i=1}^S (X_{iA} - X_{iB})^2}$$

Squared Euclidean Distance:

$$SED = ED_{AB}^2$$

Mean Euclidean Distance:

$$MED_{AB} = \frac{ED_{AB}}{\sqrt{S}}$$

Absolute Distance:

$$AD_{AB} = \sum_{i=1}^S |X_{iA} - X_{iB}|$$

Mean Absolute Distance:

$$MAD_{AB} = \frac{AD_{AB}}{S}$$