

Deviation

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$$Mean\langle x \rangle = \frac{1}{N} \sum_{i=1}^n x_i$$

$$Variance = \frac{1}{N} \sum_{i=1}^n (x_i - \langle x \rangle)^2 = \sigma^2$$

$$StandardDeviation = \sqrt{Variance} = \sigma$$

$$\sigma = \sqrt{\frac{1}{N} \sum_{i=1}^n (x_i - \langle x \rangle)^2}$$