

도수분포에서의 분산

(Variance of Frequency Distribution)

Variance of Frequency Distribution

▶ Start

Variance of Frequency Distribution

▶ Start

x_i	f_i	$x_i f_i$
x_1	f_1	$x_1 f_1$
\vdots	\vdots	\vdots
x_n	f_n	$x_n f_n$

Variance of Frequency Distribution

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$$f_1 + f_2 + f_3 + \cdots + f_n$$

Variance of Frequency Distribution

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$$f_1 + f_2 + f_3 + \cdots + f_n = \sum_{i=1}^n f_i$$

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$$f_1 + f_2 + f_3 + \cdots + f_n = \sum_{i=1}^n f_i = N$$

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Variance :

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Variance : σ^2

Variance of Frequency Distribution

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$$f_1 + f_2 + f_3 + \cdots + f_n = \sum_{i=1}^n f_i = N$$

$$\text{Variance : } \sigma^2 = \frac{\sum_{i=1}^n (x_i - m)^2 f_i}{\sum_{i=1}^n f_i}$$

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$$f_1 + f_2 + f_3 + \cdots + f_n = \sum_{i=1}^n f_i = N$$

$$\text{Variance : } \sigma^2 = \frac{\sum_{i=1}^n (x_i - m)^2 f_i}{\sum_{i=1}^n f_i} = \frac{1}{N} \sum_{i=1}^n (x_i - m)^2 f_i$$

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$$\text{Variance : } \sigma^2 = \frac{\sum_{i=1}^n (x_i - m)^2 f_i}{\sum_{i=1}^n f_i} = \frac{1}{N} \sum_{i=1}^n (x_i - m)^2 f_i = \frac{1}{N} \sum_{i=1}^n (x_i^2 - 2mx_i + m^2) f_i$$

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$$f_1 + f_2 + f_3 + \cdots + f_n = \sum_{i=1}^n f_i = N$$

$$\begin{aligned} \text{Variance : } \sigma^2 &= \frac{\sum_{i=1}^n (x_i - m)^2 f_i}{\sum_{i=1}^n f_i} = \frac{1}{N} \sum_{i=1}^n (x_i - m)^2 f_i = \frac{1}{N} \sum_{i=1}^n (x_i^2 - 2mx_i + m^2) f_i \\ &= \frac{1}{N} \sum_{i=1}^n x_i^2 f_i \end{aligned}$$

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▶ Home

END