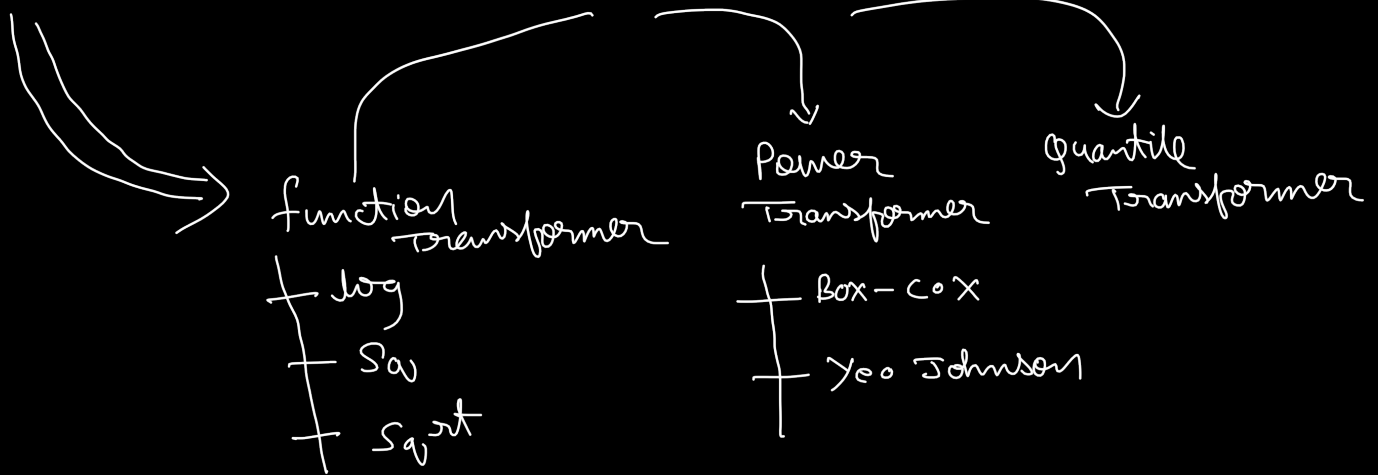


Power Transformer

Box-Cox Transformer || Yeo Johnson Transformer

(SK learn)

Mathematical Transformation



Box Cox Transformer

↳ given data transformed into Normal distribution

$$x_i^{(\lambda)} = \begin{cases} \frac{x_i^\lambda - 1}{\lambda} & \text{if } \lambda \neq 0 \\ \ln(x_i) & \text{if } \lambda = 0 \end{cases}$$

The exponent here is a variable called lambda (λ) that varies over the range of -5 to 3, and in the process of searching, we examine all values of λ . finally, we choose the optimal value (resulting in the best approximation to a normal distribution) for your variable.

* It is strictly applicable to number that is greater than zero, $x > 0$

#

Yeo-Johnson Transform

$$x_i^{(\lambda)} = \begin{cases} [(x_i+1)^\lambda - 1]/\lambda & \text{if } \lambda \neq 0, x_i \geq 0 \\ \ln(x_i) + 1 & \text{if } \lambda = 0, x_i \geq 0 \\ -[(-x_i+1)^{2-\lambda} - 1]/(2-\lambda) & \text{if } \lambda \neq 2, x_i < 0 \\ -\ln(-x_i+1) & \text{if } \lambda = 2, x_i < 0 \end{cases}$$

This transformation is somewhat of an adjustment to the Box-Cox transformation, by which we can apply it to negative numbers.

Power Transformation class in sklearn