OneNote for Windows 10

Home Insert Draw View Help

Shapes Ink to Shape Ink to Text

100 Days of ML

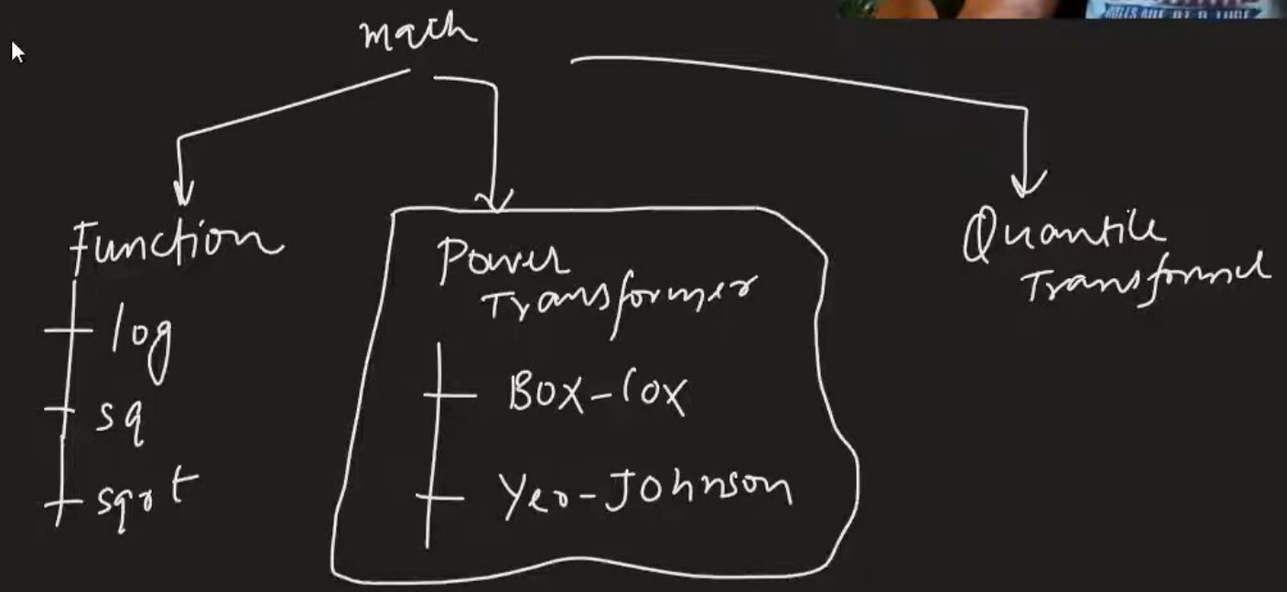
- Day 13 - End to En...
- Day 14 - Framing t...
- Day 15 - Working...
- Day 16 - Working...
- Day 17 - API to Pa...
- Day 18 - Web Scra...
- Day 19 - Understa...
- Day 20 - Univariate...
- Day 21 - Bivariate...
- Day 22 - Pandas Pr...
- Day 23 - Feature E...
- Day 24 - Standardi...
- Day 25 - Normaliza...
- Day 26 - Ordinal E...
- Day 27 - One Hot E...
- Day 28 - ColumnTr...
- Day 29 - Pipelines
- Day 30 - Function T...
- Day 31 - Power Tra...

Add section Add page

- Power Transformer
- Box Cox Transform
- Yeo - Johnson Transform
- Example

Power Transformer

Saturday, April 17, 2021 4:55 PM



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Box Cox Transform

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

↳ $\eta > 0$ -ve

The exponent here is a variable called lambda (λ) that varies over the range of -5 to 5, 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.

given dist.
↳ Normal dist

x^2, x^3, x^{15}

1.5, 11.

1) Max. likelihood
2) Bayesian

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Yeo - Johnson Transform

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

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

Power Transformer