

$y = \frac{\Delta x}{\Delta z}$
 $(x-y)^2$
 $\phi = \sqrt{\frac{\sum (x-m)^2}{n-1}}$
 $\int (x \pm a)^2$
 $Q = \begin{bmatrix} 1 & 0 & 0 \\ 1 & 0 & 1 \\ 0 & 0 & 1 \end{bmatrix}$
 $\pi \approx 3.14$
 $\lim_{x \rightarrow 1} \frac{\text{ctg} x - 2}{2^{11} x^3}$
 $P = r^2$
 $\ln = \sqrt{a \times b}$
 $4x = 8 - 3y^2$
 $e = 2.79$
 $\sum = n-1$
 $A-C$

Why Linear algebra for Machine learning??

$x^2 + y^2 = z$
 $\frac{\Delta x}{\Delta y} = \lim_{\Delta y \rightarrow 1} \frac{\Delta x + 2}{\Delta y - 1}$
 $e = \cos x + \text{tg} y$
 $\int = \frac{\sqrt{x+a^2}}{x}$
 $X_{1/2} = \frac{b \pm (a-c)}{\sqrt{a}}$
 $S = \int_{t=2}^{10} 5t dt = \frac{\Delta x}{\Delta z}$
 $\sin a = \frac{b^3}{(x+h)}$
 $x+h=c$
 $n = \frac{x^n}{n!}$

swipe <<<



- **Lot of ML concepts are tied up with linear algebra.**
- **To understand notation in books.**
- **Helps you to read and interpret statistical concepts.**
- **Helps to understand PCA**
- **It Helps Build Better ML Algorithms From Scratch**
- **For Processing Graphics In ML**
- **Helps to understand Matrix factorization**
- **ML completely uses matrix operations.**

Resources <<<



- **Essence Of Linear Algebra By 3Blue1Brown**
- **Linear Algebra By Khan Academy**
- **Computational Linear Algebra for Coders By fast.ai**
- **MIT linear algebra**



- **Introduction to Linear Algebra by Gilbert Strang,**
- **Numerical Linear Algebra by Lloyd Trefethen.**
- **Linear Algebra and Its Applications by Gilbert Strang.**
- **Matrix Computations by Gene Golub and Charles Van Loan**
- **Deep Learning (book) deeplearningbook.org**



- **Linear Algebra on Khan Academy**
- **Linear Algebra: Foundations to Frontiers on edX**
- **Andrew Ng's Machine Learning course on Coursera**

Thank You.

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Happy Learning

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