

Twitter Thread by Pratham Prasoon



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Do you want to learn the maths for machine learning but don't know where to start?

This thread is for you.



The guide that you will see below is based on resources that I came across, and some of my experiences over the past 2 years or so.

I use these resources and they will (hopefully) help you in understanding the theoretical aspects of machine learning very well.

Before diving into maths, I suggest first having solid programming skills in Python.

Read this thread for more details■

<https://t.co/sSN3jdxDwK>

Are you planning to learn Python for machine learning this year?

Here's everything you need to get started.

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— Pratham Prasoon (@PrasoonPratham) February 13, 2021

These are topics of math you'll have to focus on for machine learning■

- Trigonometry & Algebra

These are the main pre-requisites for other topics on this list.

(There are other pre-requisites but these are the most common)

- Linear Algebra

To manipulate and represent data.

- Calculus

To train and optimize your machine learning model, this is very important.

- Statistics

Make "sense" out of the data you have.

- Probability

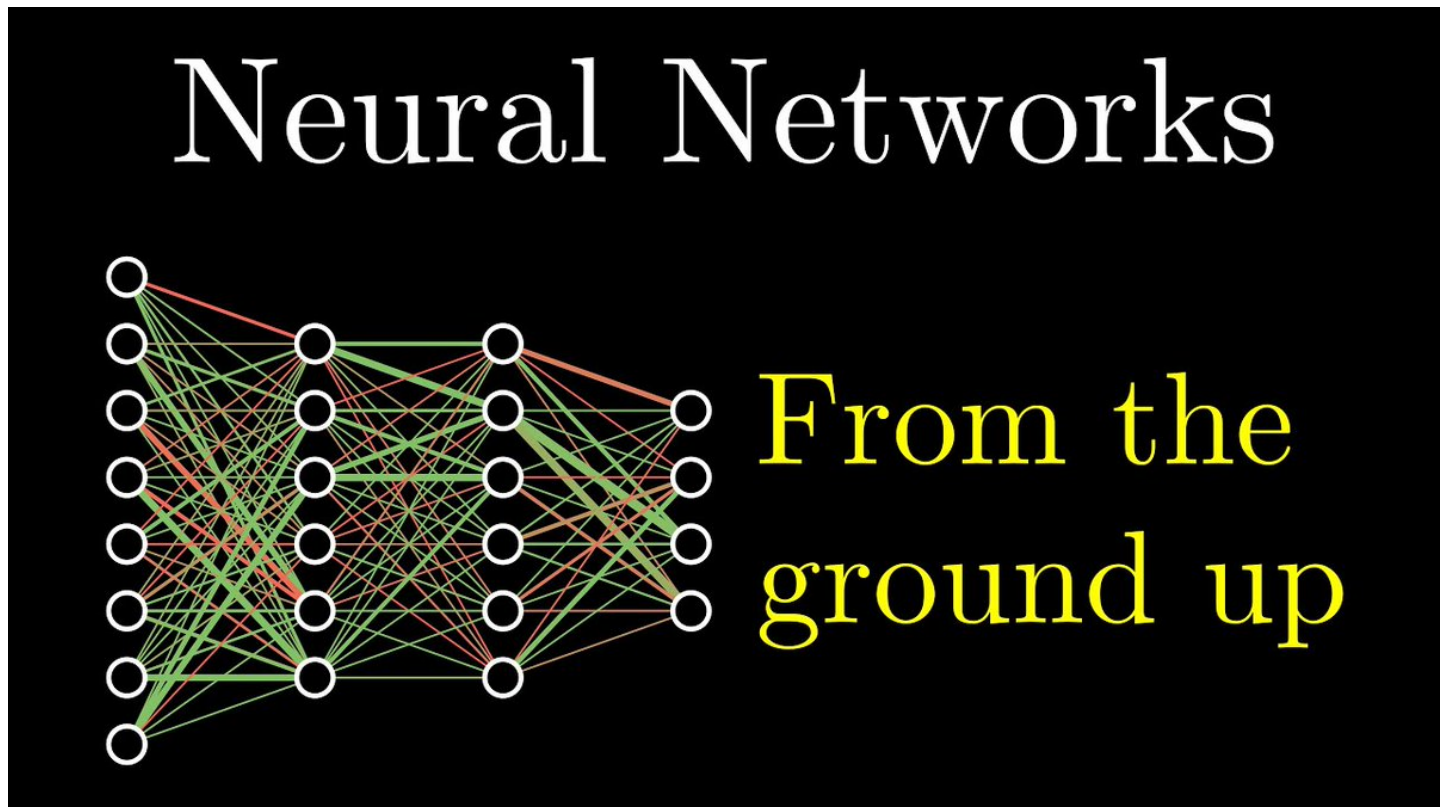
Make decisions under uncertainty.

These are some of the resources I recommend for learning these topics ■

Neural Networks

> A series of videos that go over how neural networks work with approach visual, must watch.

■ youtu.be/aircAruvnKk



Seeing Theory

> This website helps you learn statistics and probability in an intuitive way.


☰ Seeing Theory


English ▼


Chapter 1

Basic Probability

This chapter is an introduction to the basic concepts of probability theory.

Chance Events

Expectation

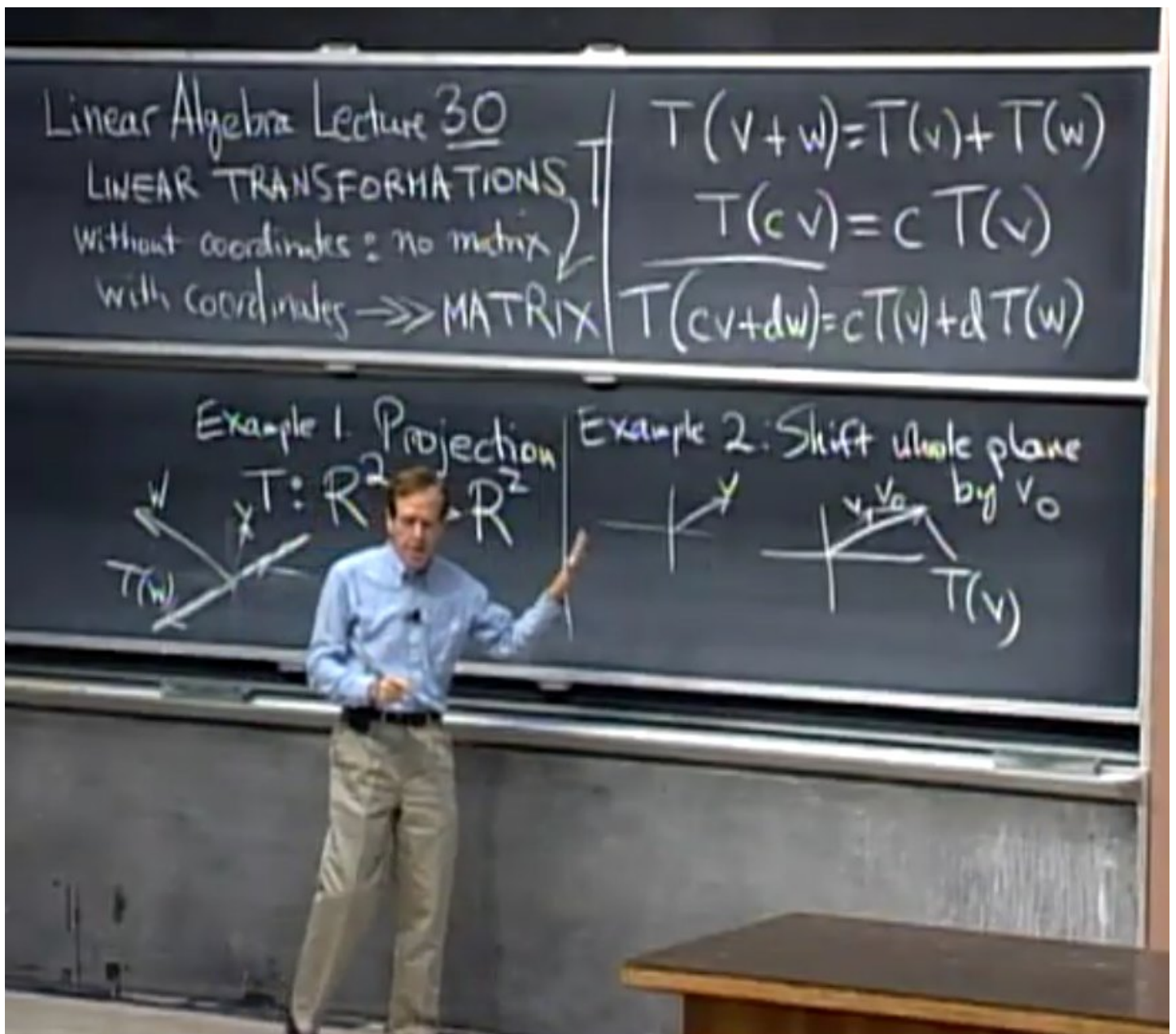
Variance

Gilbert Strang's lectures on Linear Algebra (MIT)

> This is 15 years old but still 100% relevant today!

Despite the fact these lectures are made for freshman college students at MIT, I found it very easy to follow■

■youtube.■com/playlist?list=PL49CF3715CB9EF31D



My Thread on Linear Algebra.

<https://t.co/3H7U2HJgTd>

This is a beginner-friendly introduction to:

Linear Algebra for Machine Learning.

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— Pratham Prasoon (@PrasoonPratham) January 24, 2021

The essence of Linear Algebra

> A beautiful playlist of videos which teach you linear algebra through visualisations in an easy to digest manner.

■youtube.■com/watch?v=fNk_zzaMoSs&list=PLZHQObOWTQDPD3MizzM2xVFitgF8hE_ab

Essence of linear algebra

Khan Academy

> You'll find a course on everything here! Khan Academy is the first place I'll go to when I want to learn something.

■ khanacademy.org/math

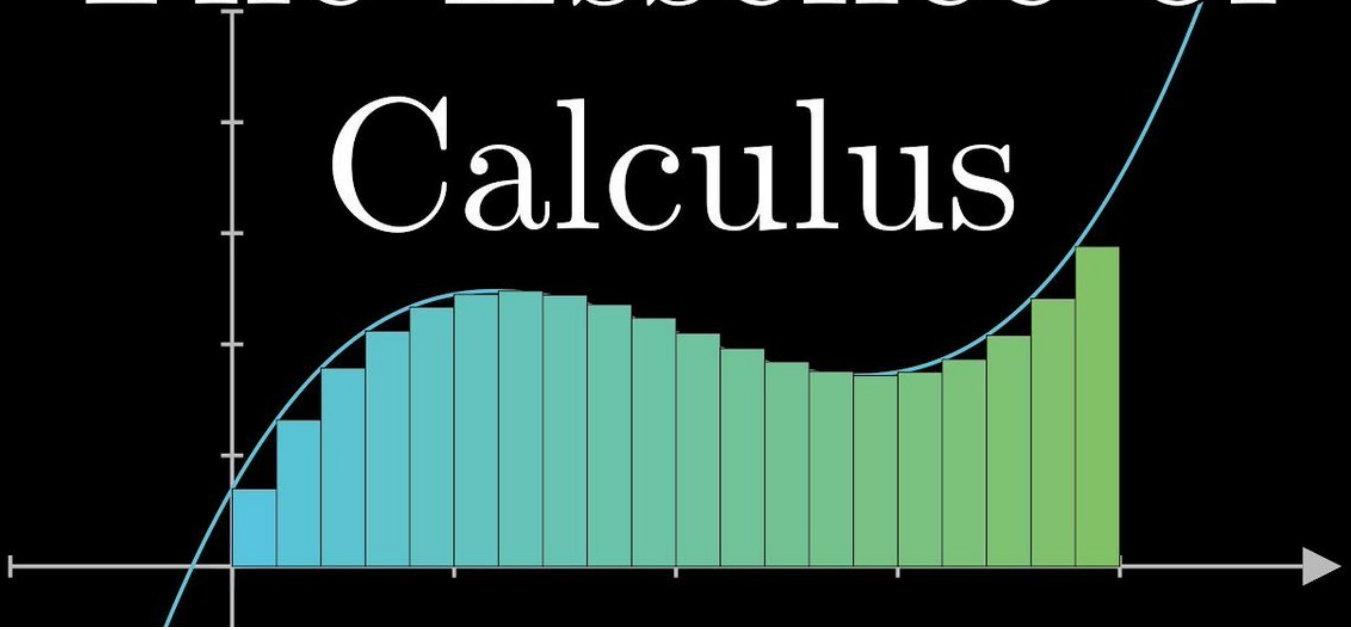


Essence of calculus

> A beautiful series on calculus, makes everything seem super simple.

■ youtube.com/watch?v=WUVTyaaNkzM&list=PL0-GT3co4r2wIh6UHTUeQsrf3mIS2Ik6x

The Essence of Calculus



The math for Machine learning e-book

> This book is for someone who knows quite a decent amount of high school math like trigonometry, calculus, I suggest reading this after having the fundamentals down on khan academy.

■mml-book.■github.■io

Mathematics for Machine Learning

Companion webpage to the book "Mathematics for Machine Learning". Copyright 2020 by Marc Peter Deisenroth, A. Aldo Faisal, and Cheng Soon Ong. Published by Cambridge University Press.

View On
GitHub

Please link to this site using <https://mml-book.com>.

Twitter: [@mpd37](#), [@AnalogAldo](#), [@ChengSoonOng](#).

We wrote a book on Mathematics for Machine Learning that motivates people to learn mathematical concepts. The book is not intended to cover advanced machine learning techniques because there are already plenty of books doing this. Instead, we aim to provide the necessary mathematical skills to read those other books.

The book is available at [published by Cambridge University Press](#) (published April 2020).

We split the book into two parts:

