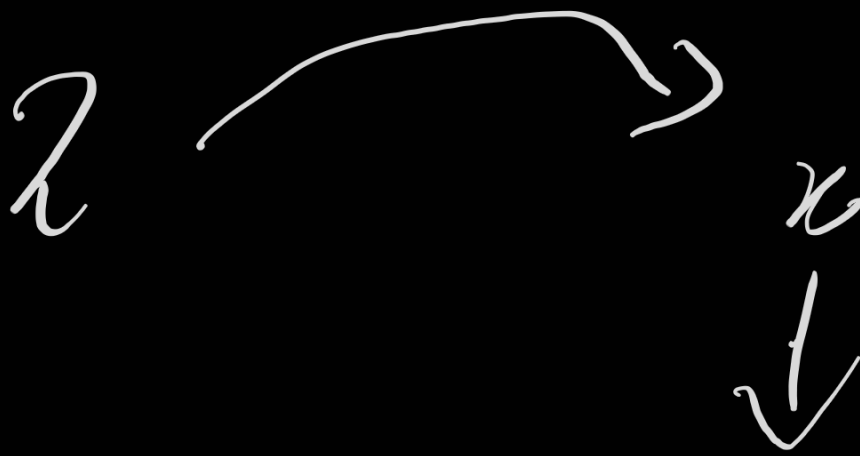


Machine learning - 1

Notations



variable



Consider it as a
constant that has

...

Some value we
just don't know
the value 1
0

$$x \in \mathbb{R}$$

x belongs to real num.

$$y \in \mathbb{R}^2$$



y will be defined

by 2 real nums

example we have a
white Board

hight length width

↓

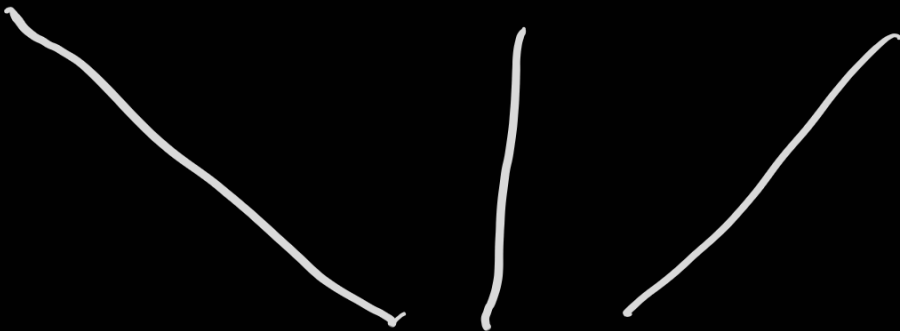
10

↓

5

↓

0.8



\mathbb{R}^3 \hookrightarrow Vectors
(1D array)

what if we
have two black-
boards having
the same three
attribute we can
write it as

$$(IR^3)^2$$



$$IR \overset{3 \times 2}{\underline{T}}$$

M

Matrix

TR $\frac{3 \times 2 \times 5}{\downarrow}$

tensor.

A diagram illustrating a tensor contraction operation. It shows a large yellow bracketed expression $[\dots]$ with two green arrows indicating the contraction of indices. One green arrow starts from the top-left index and points to the bottom-right index. The other green arrow starts from the top-right index and points to the bottom-left index. The result of the contraction is shown as an equals sign followed by a single index in brackets $[\dots]$.

$$x = \mathbb{R}^{3 \times 1} \quad y = \mathbb{R}^{3 \times 1}$$

Row = column

For that we write.

$$x^T y$$

Vectorization is much

Faster than loop

