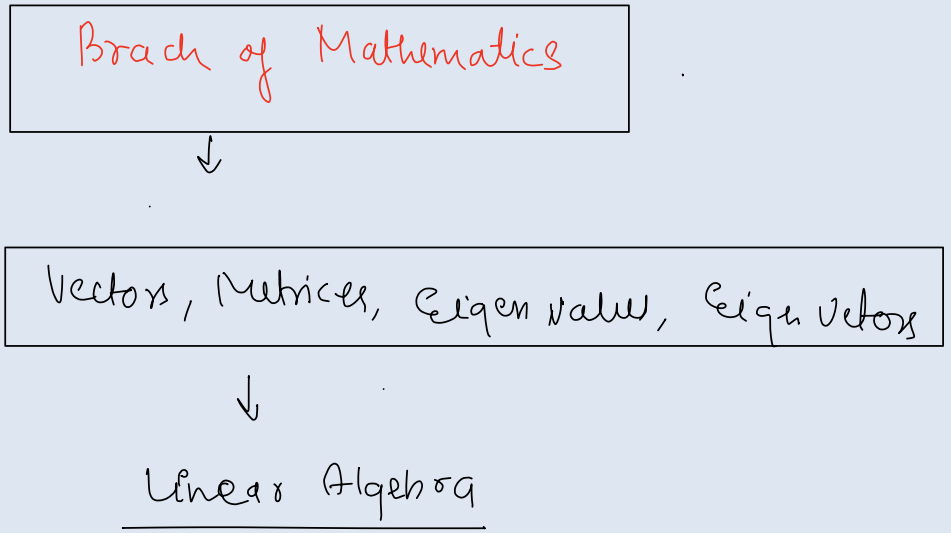
Linear Algebra:

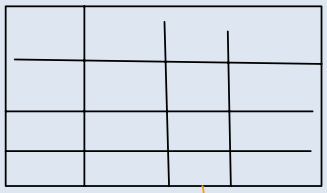


* Importance → use case → House (Data Representation)

1) Vectors →

	No Room	Area	Acre	Price
Data value	2	600sq	5 acr	2100$

$$[2 \quad 6 \quad 5 \quad 2100] \rightarrow \text{vectors}$$

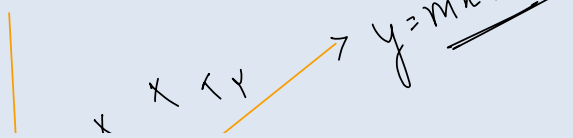
2) Image –  4x4 → Num's

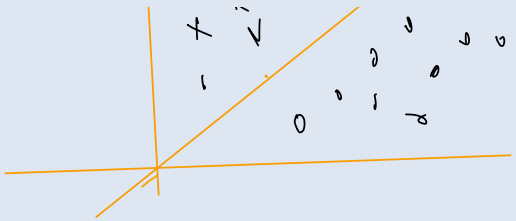
Image

(2) → I love Mathematics → Numerical → [0 1 0]

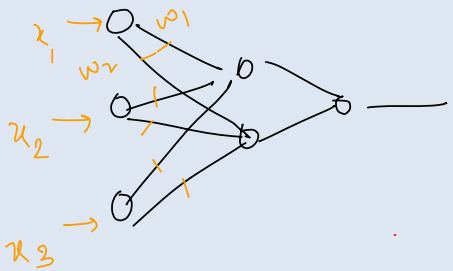
{ Textual → vectors } → word → Embedding

(3) → Model Training →





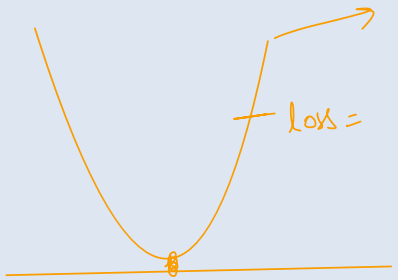
Neural Network →



$w_1, w_2, w_3, w_4 \ldots\ldots$

$x_1 \times w_1 + w_2 \times x_2 \ldots\ldots$

(4) optimizes →



$y = mx + c$

loss / optimez.

(5) → Robotics → Movemt → vector / map dire

(6) → Data compression →

Dimensolity Reduction →

Signal processiy →

Rewmmtion Systems →

→ <u>vectors</u> → 1) Vector

2) Application

3) operations → sum, sub,

4) Data science.

Day 2 → Vectors :-

It is a collection of number, representing data features, or data. It has both Magnitude & Direction

Scalar → Scalar has Magnitude but No direction (or dim)

Scalar (M)

Vector (D, M)

Mag

5km

↓

Scalar

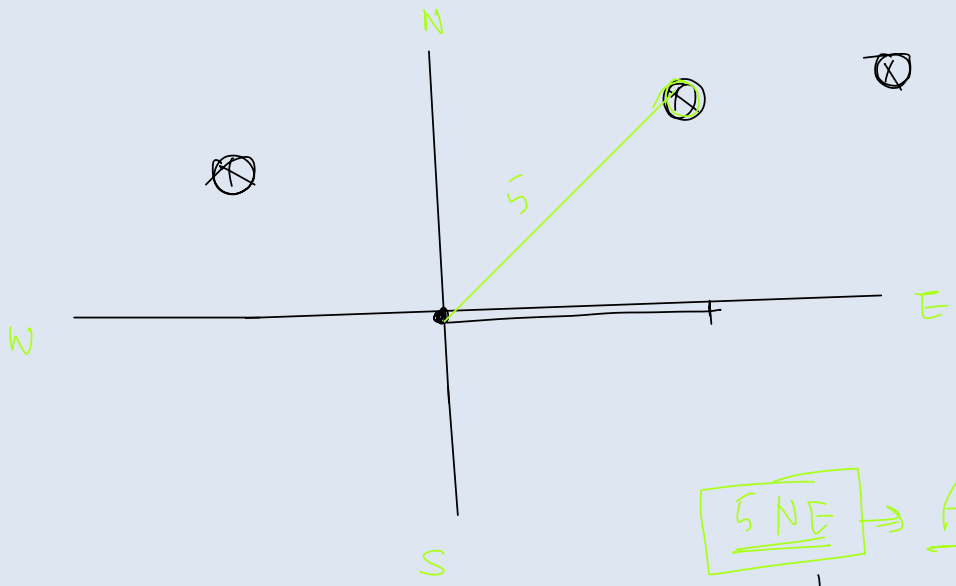
Mag

5km (NE)

Dir

↓

Vector



5 NE ⇒ Accurate

Representation ⇒ $\vec{5}$

[5 1]

[5 1 3] → Multiple dimension

↓

Represent

Ex → House → data features →

House ⇒

3 Rooms

2 Bathroom

1 Kitchen

[3 2 1] → 3 dimension

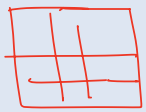
↓

Multiple feature ⇒ 50

* [1 2 3 . . . . . 50] → Multiple dimension

* Applications → Text Representation → NLP

I love Math → [[1 0 0] [0 1 0] [0 0 1]]

(2) → Image processing →  → Matrix →

3x3

1 x 9 — vector

(3) → Recommandation system →

Day -3