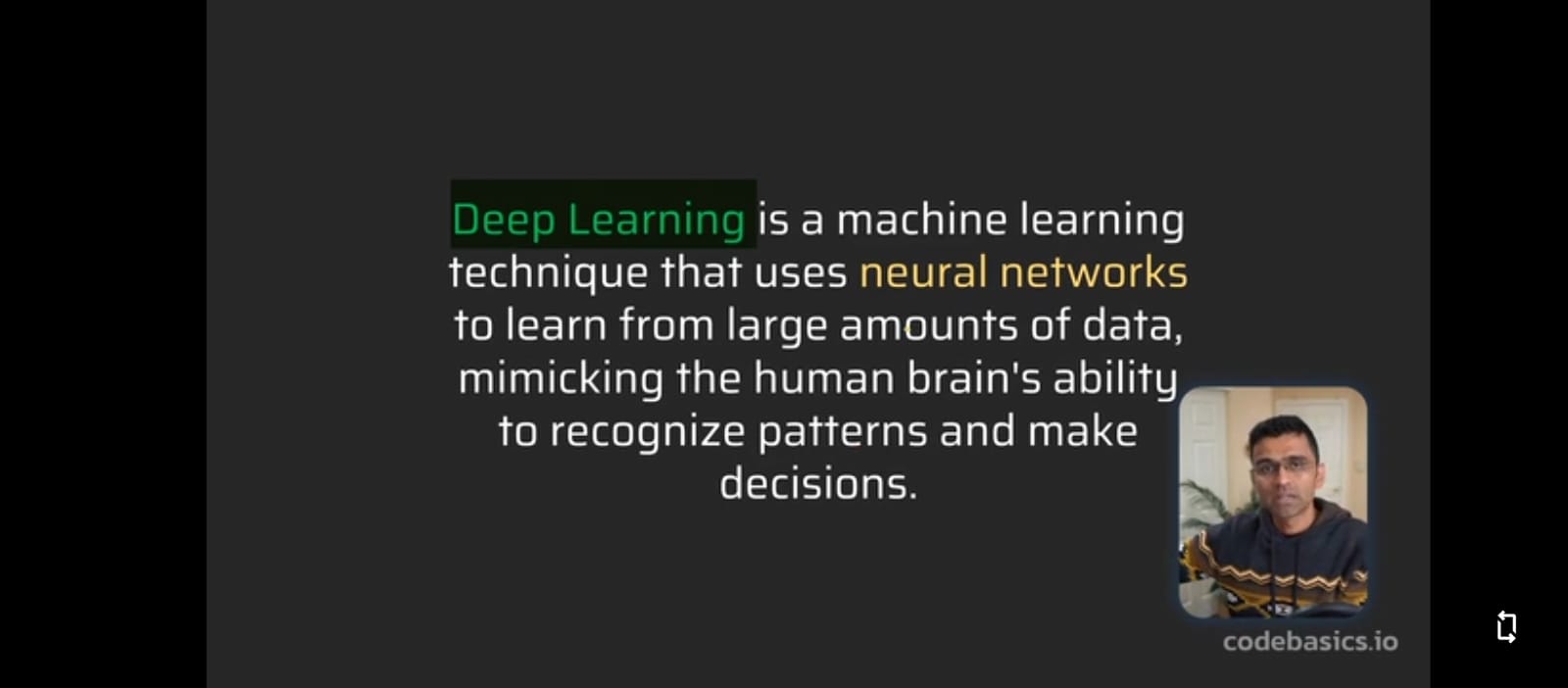
My Deep Learning Journey



When to use

A person standing in front of yellow post-it notes

AI-generated content may be incorrect.

Deep Learning Architecture

A person making orange juice

AI-generated content may be incorrect.

A screenshot of a computer

AI-generated content may be incorrect.

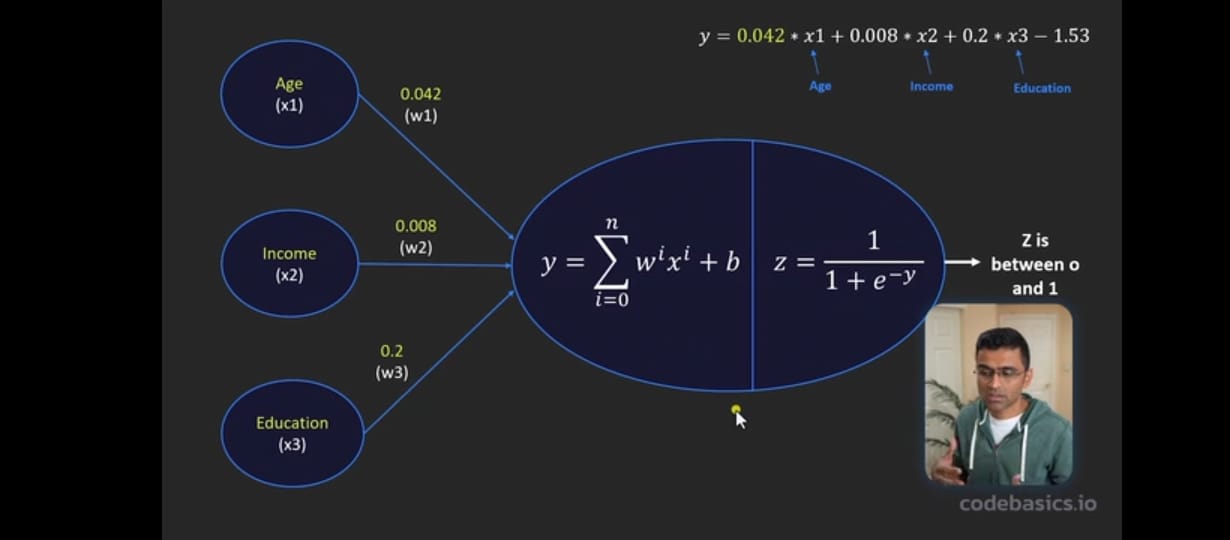
A screenshot of a computer

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A black screen with white text

AI-generated content may be incorrect.

## What is Neuron



A screenshot of a computer

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A complete unit that take input apply processing and give output

## What is Perceptron

A person with a white hat

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It is most simplified form of a neuron and it’s activation function is step function

## Multi Layered Perceptron or Multi layered Neuron

* It’s a **network of many neurons organized in multiple layers**:
  + Input layer (just passes input),
  + One or more **hidden layers** (each with multiple neurons),
  + Output layer.
* Each neuron in one layer connects to **all neurons** in the next layer.

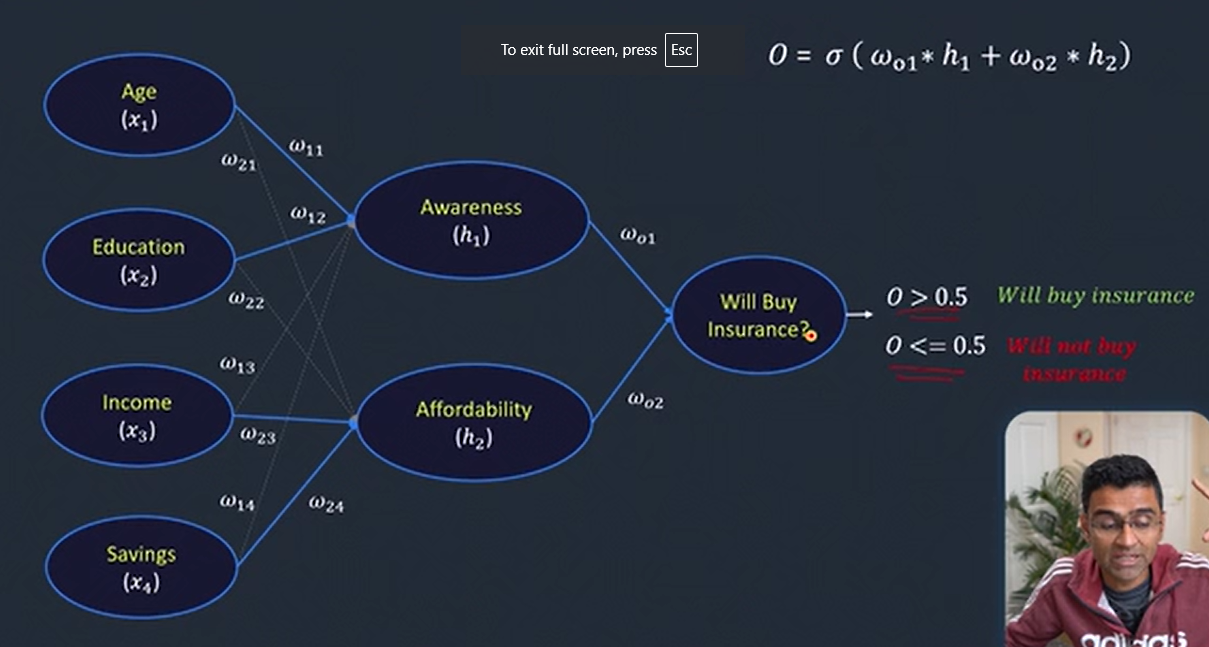
**Simple Neuron:**

inputs → [neuron] → output

**MLP:**

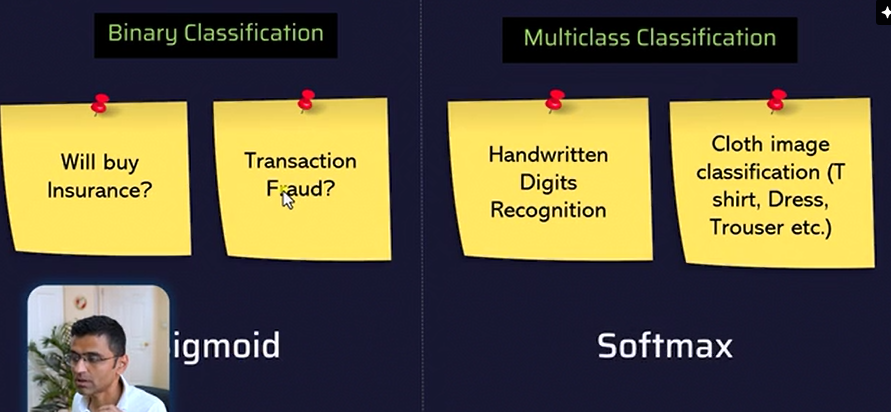
inputs → [layer 1: many neurons] → [layer 2: many neurons] → output layer

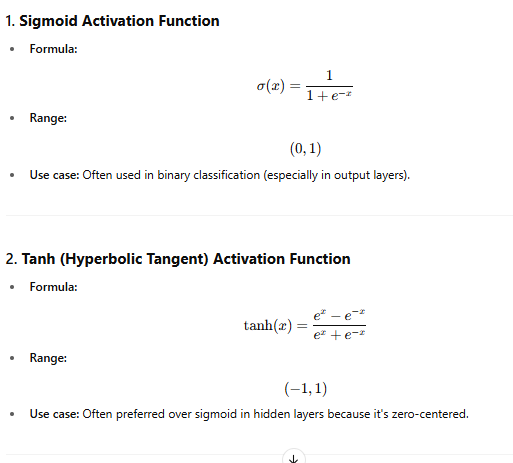
## Intution of Neural Networks



## Activation Function

**Why we need** because we have to introduce no linearity in some cases like in the logistic regression





A screenshot of a math formula

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A white background with black text

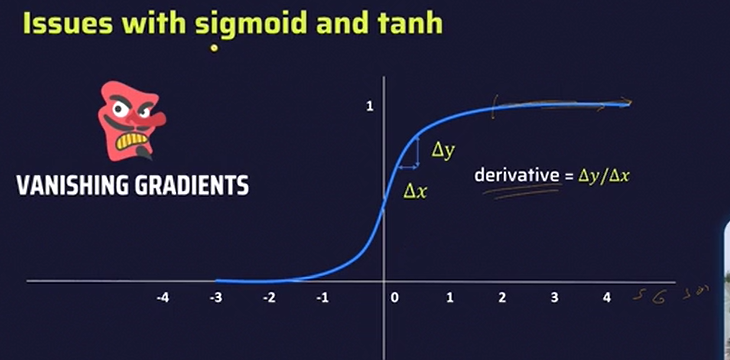
AI-generated content may be incorrect.

Soft make converts input into porbablities so that sum of all the probabilities is 1

A screenshot of a computer screen

AI-generated content may be incorrect.

Issue with the sigmoid and tanh



At some point the derivative can no be findable because slope become stariht line like at position 10000

Thus it cannot be used in the hidden layer but can be used in output layers

To solve this problem **ReLu (z)** come in the hidden layer because

A screen shot of a graph

AI-generated content may be incorrect.

A screenshot of a computer

AI-generated content may be incorrect.

To Solve the problem of dead neuron

