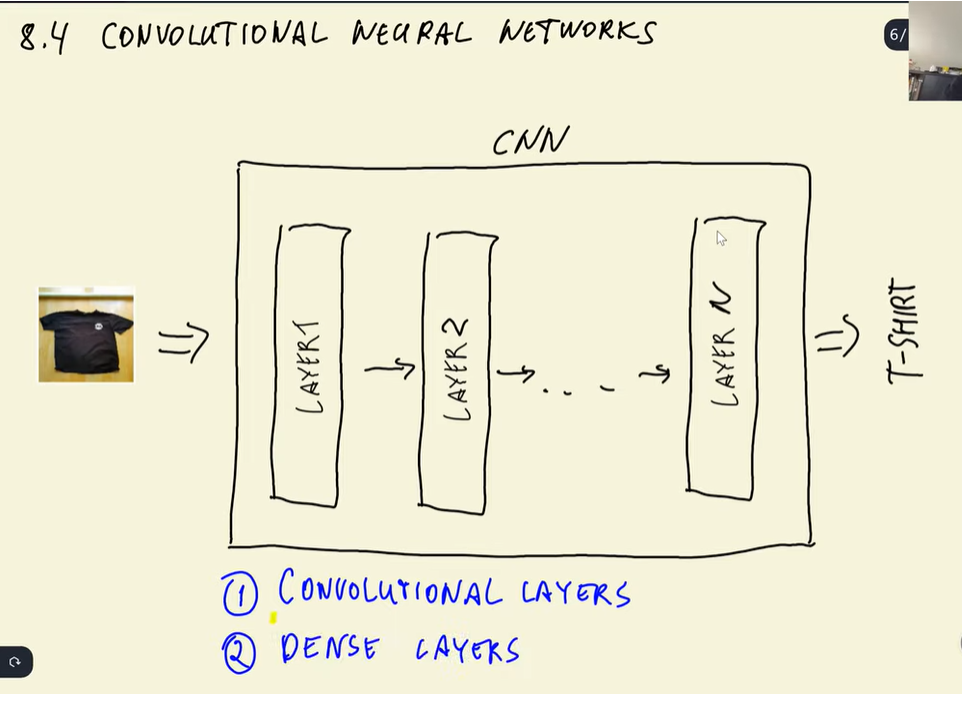
**ML Zoomcamp 8.4 - Convolutional Neural Networks**

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**Convolutional layers:**

Filters like small images

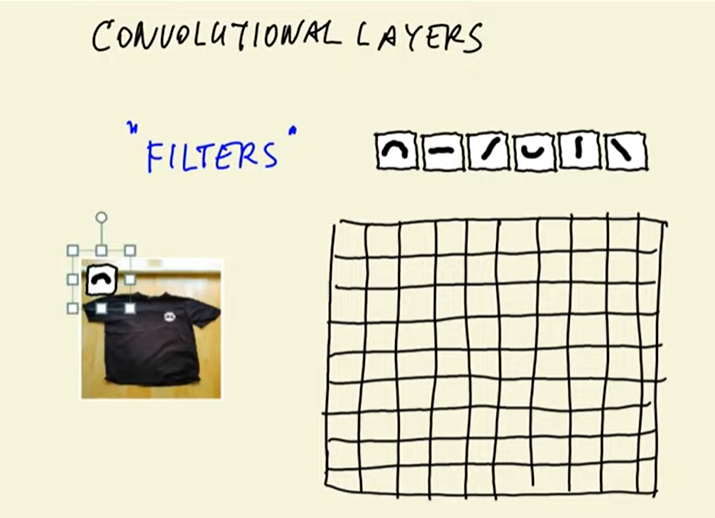
A white board with black text and black text

AI-generated content may be incorrect.

Simple shapes

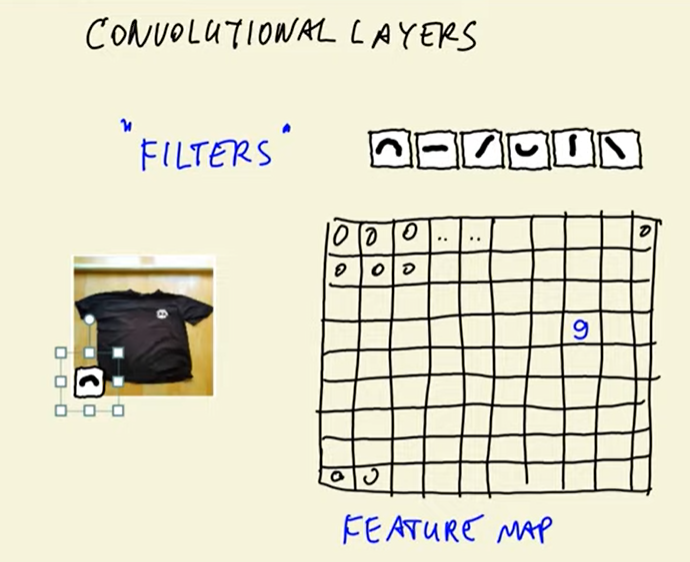
We tke our image and slightly filter across the image

Check how similar it is to part of images



Take image where part is on (found)

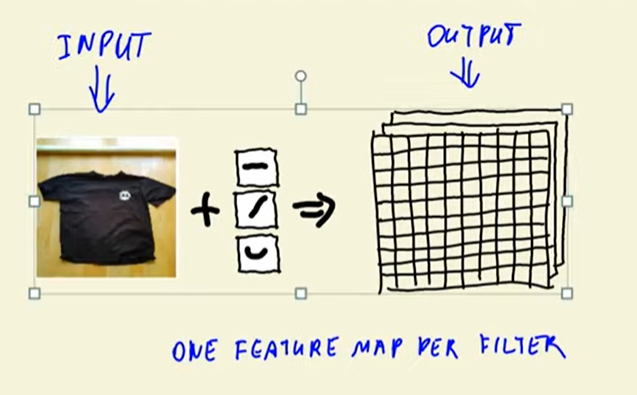
Feature map

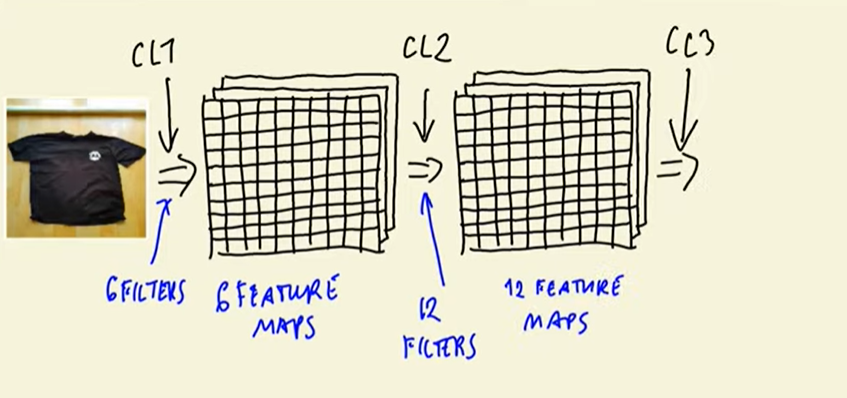


Higher value --? Higher similarity

{

Multiple feature map





Each conv layr can get more and more filters

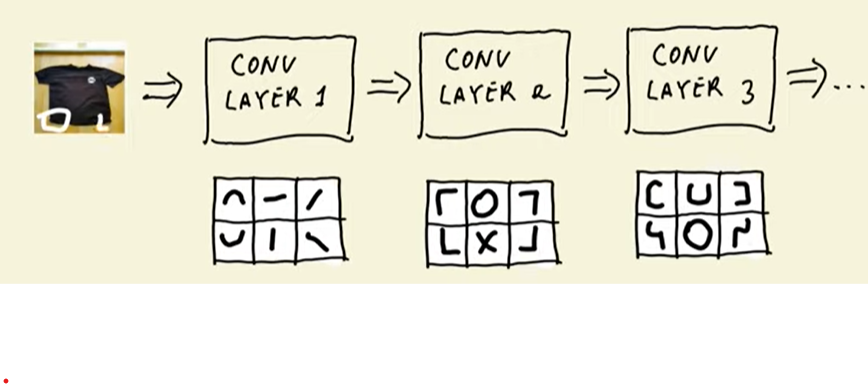
A diagram of a diagram

AI-generated content may be incorrect.

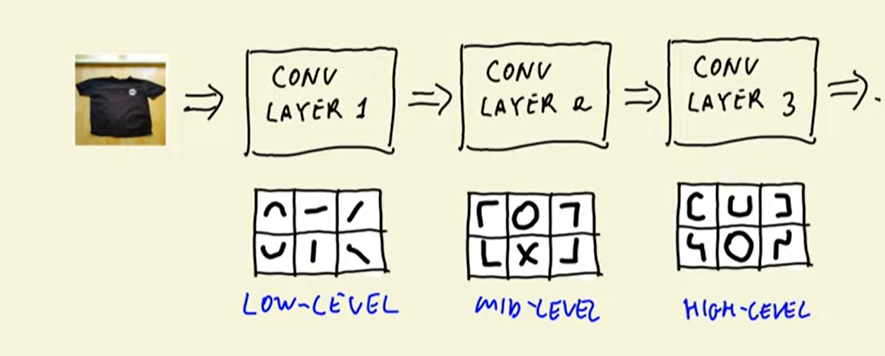
Layer learn features

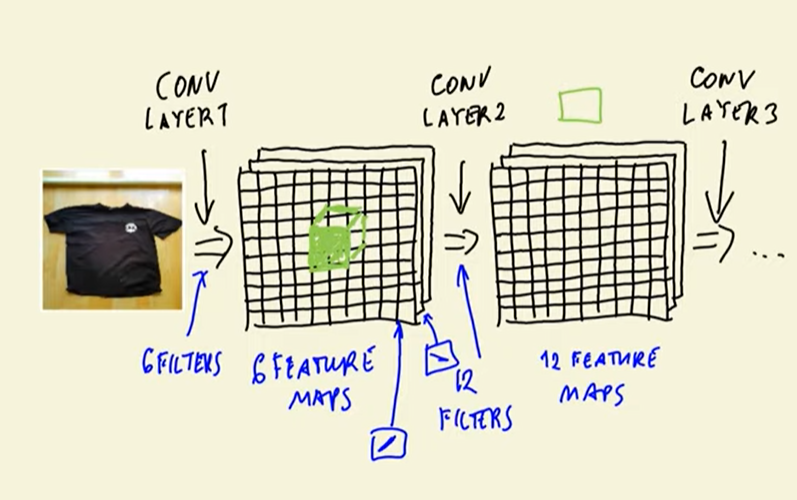
A diagram of a diagram

AI-generated content may be incorrect.



Higher level of features:





A diagram of a diagram

AI-generated content may be incorrect.



Out of these we get the vectore representation of the image

A person in a black shirt

AI-generated content may be incorrect.

A diagram of a diagram

AI-generated content may be incorrect.

A diagram of a process

AI-generated content may be incorrect.

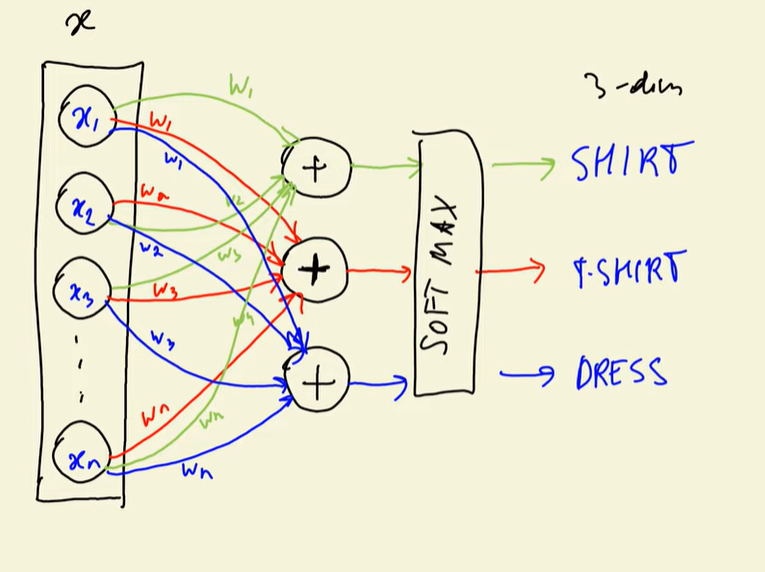
Vector representation

A whiteboard with text on it

AI-generated content may be incorrect.

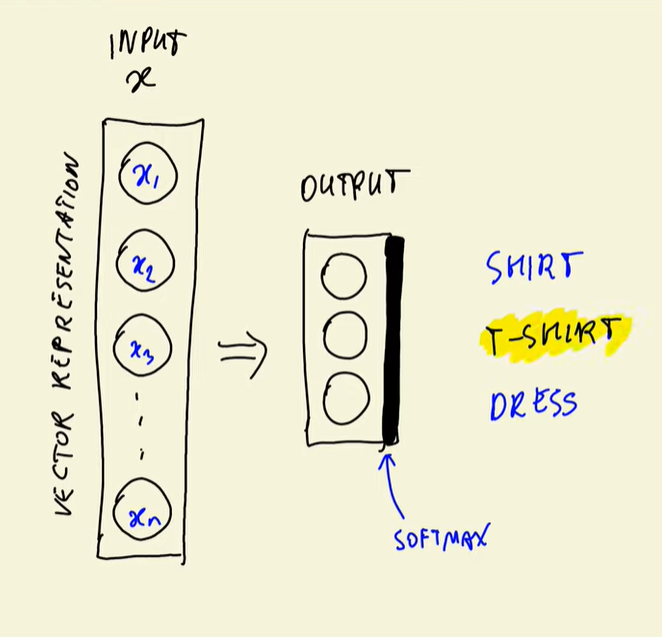
A diagram of a prob diagram

AI-generated content may be incorrect.



A diagram of a shirt and dress

AI-generated content may be incorrect.



A diagram of a software development

AI-generated content may be incorrect.

A diagram of a device

AI-generated content may be incorrect.

Dense layer

Called so because it connects each element of input to each element of output

A diagram of a machine

AI-generated content may be incorrect.

dense layer is nothing but matrix multiplication

A diagram of a structure

AI-generated content may be incorrect.

A drawing of a yellow object

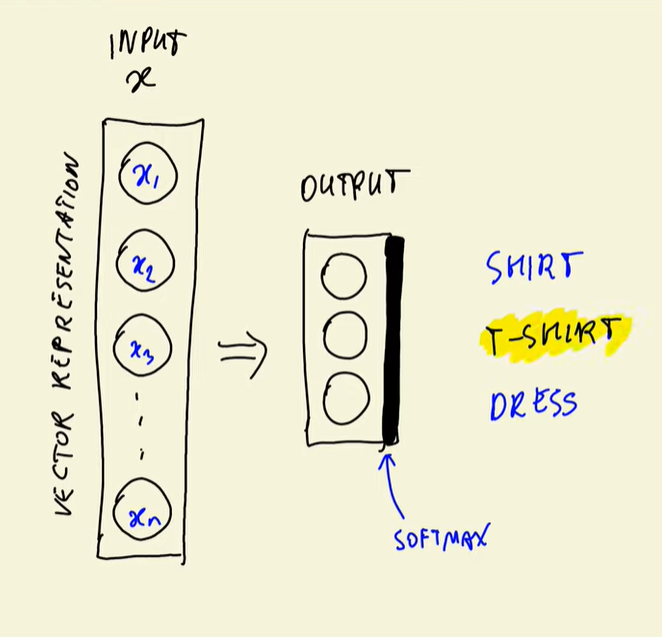
AI-generated content may be incorrect.

Tshirt image

To vectore representation

Then desnse layer to final prediction





poling layer

to have fewer parameters

A drawing of a pool

AI-generated content may be incorrect.