10-16-2024 Neural Networks and Fuzzy Logic

Filters

They are fundamental components that enable the network do tetect images. They aer typically a small matrix of weight that is applied across the input image to extract specific features. They are initialized with random values and are adjusted during training to detect important features in the image.

Formula - $n + 2p - f + 1$

Padding

It is used to control the output size of the convolution, padding is adds extra pixels (usually zeros) around the border of the image.

Same Padding

Ensures that convolutional output or feature map. Thus the same size as the input appropiately padding = 1.

Wild Padding

No padding is applied, so the output feature map is smaller than the input padding = 0.

Stride

No. of pixels by which the filter moves through the input.

Convolutional Layer

It detects features like edges and shapes. It is the heart of the CNN.