***How Computers Interpret Images***

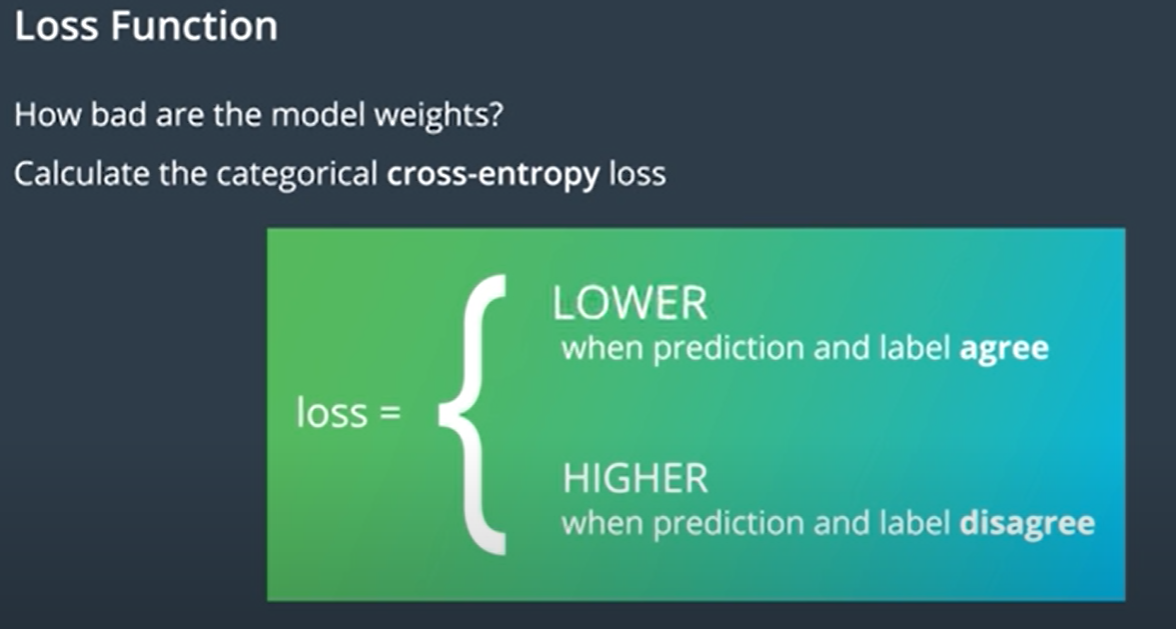
Normalisation : c’est le fait de convertir nos pixels de 0-255 à 0-1.0 et pour cela nous devons diviser chaque pixel par 255.

Flatenning : convertir n’importe qu’elle image en vecteur

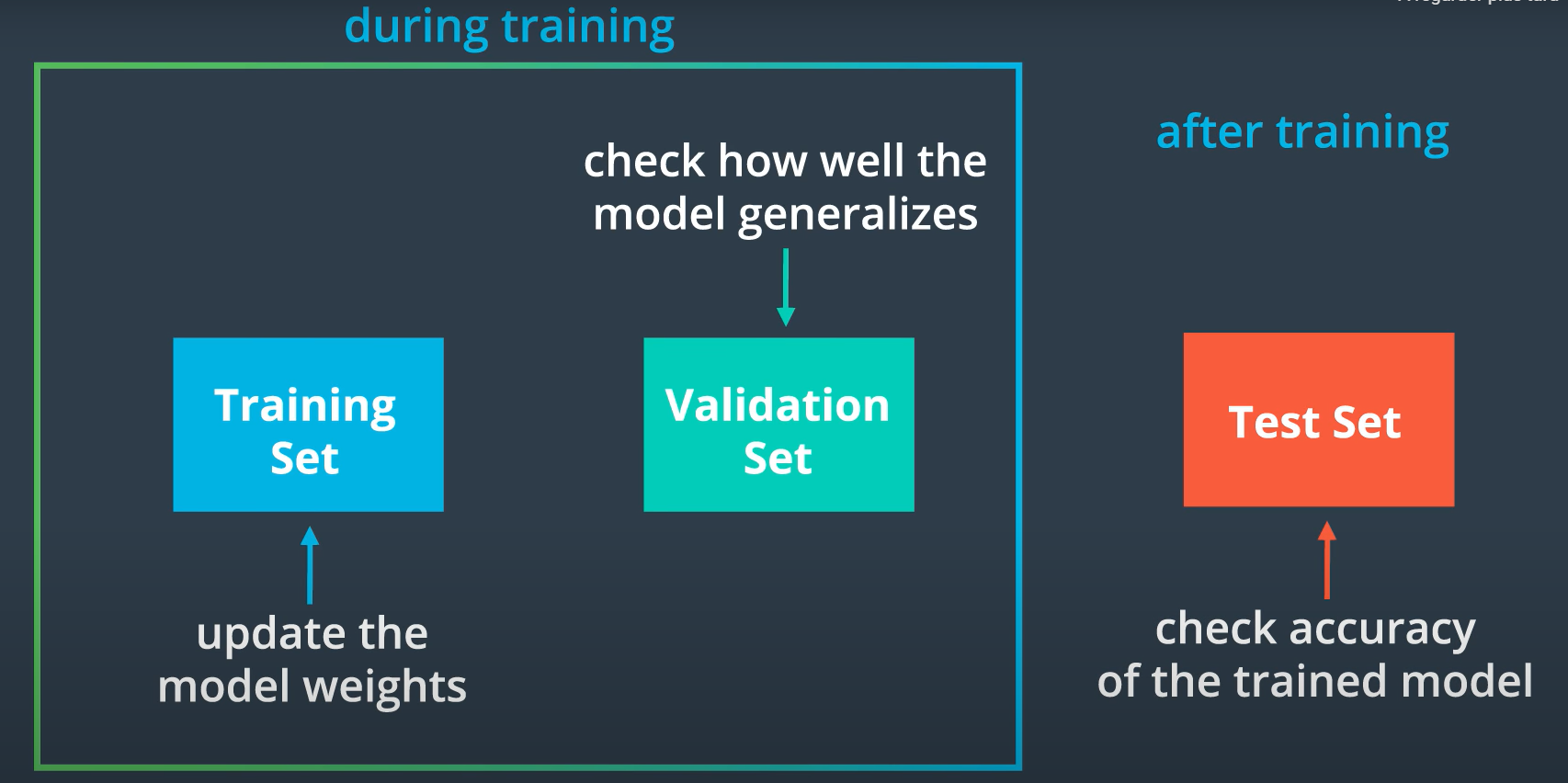
Dropout : c’est le fait de désactiver des nœuds de manière séquentielle pour éviter l’overfitting. A savoir que les nœuds de sortie ne peuvent pas être désactiver.

***Loss & Optimization***





***Model Validation***

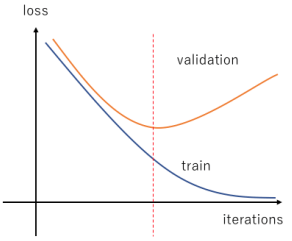


***Validation Set: Takeaways***

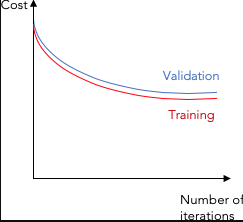
We create a validation set to :

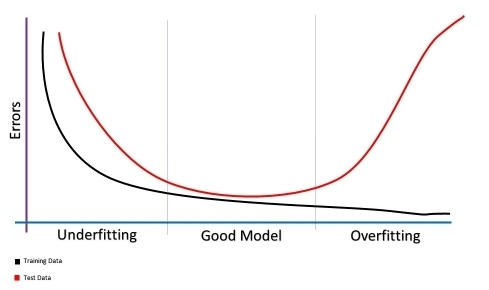
1. Measure how well a model generalizes, during training
2. Tell us when to stop training a model; when the validation loss stops decreasing (and especially when the validation loss starts increasing and the training loss is still decreasing)

***Overfitting***



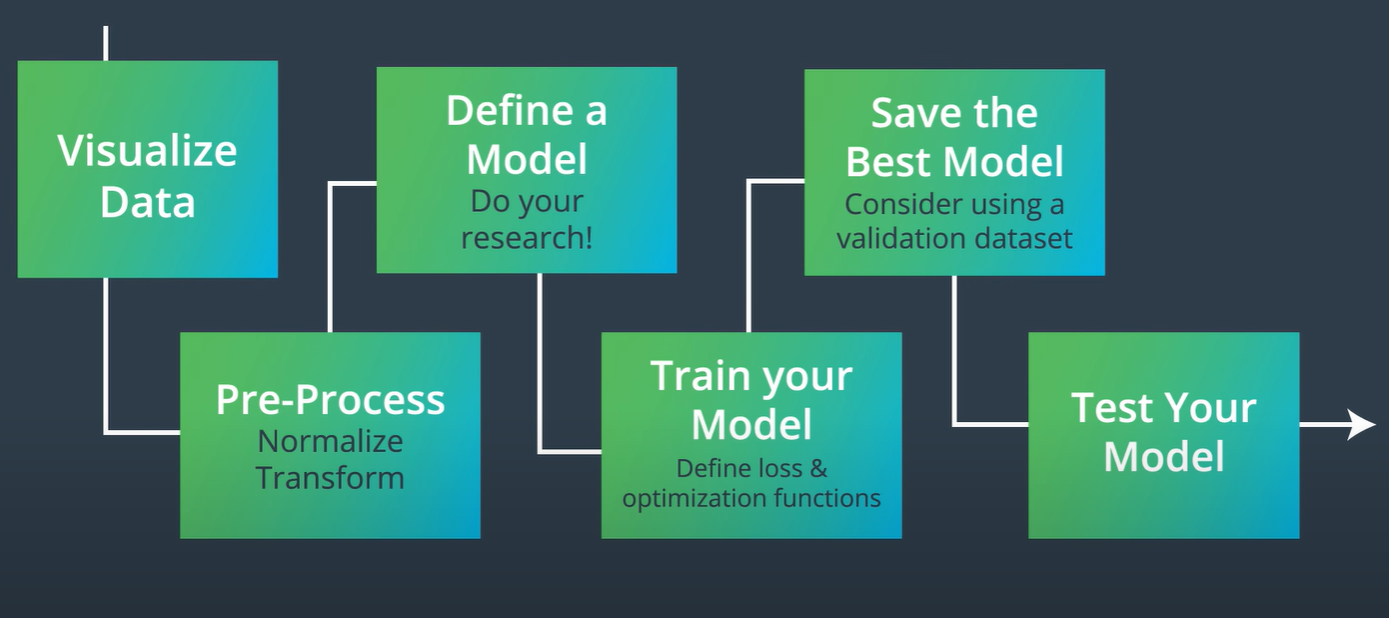
***Underfitting***





* The training process should be stopped when the validation error trend changes from descending to ascending

***Image classification steps***



***MLP vs CNN***



***Frequency in images***

High and low frequency

Similarly, frequency in images is a **rate of change**. But, what does it means for an image to change? Well, images change in space, and a high frequency image is one where the intensity changes a lot. And the level of brightness changes quickly from one pixel to the next. A low frequency image may be one that is relatively uniform in brightness or changes very slowly. This is easiest to see in an example.

