**How does Transfer Learning work? When to use Transfer Learning?**

Transfer learning is a machine learning technique where a model that has already been trained is used as a starting point for a new task instead of training a new model from scratch. The pre-trained model in transfer learning has previously learned general patterns and features from a big dataset.

Transfer learning can be applied in a variety of contexts.

* When you have a little dataset, it is difficult to train a deep neural network due to overfitting.
* When you wish to shorten your training time.
* When you wish to boost your performance.

**When training a Convolution Neural Network in the parameters what do each of the letters mean, for example NHWC?**

In a Convolutional Neural Network (CNN), the letters NHWC represent the order of dimensions in a tensor, where:

N is the number of samples in a batch.

H: indicates the input image's height.

The width of the input image is represented by W.

C: the number of channels in the input image (e.g., 1 for grayscale images, 3 for RGB images).

**How does an SSD (single shot multi box detector) object detection model work?**

The Single Shot MultiBox Detector (SSD) is a model for finding objects in an image that only needs one forward pass through a neural network. It is based on the idea of generating a collection of predictions for the location and class of objects by employing a set of pre-defined anchor boxes that are centered at each pixel in an image.

**What is Intersection over Union and why do we use Intersection over Union?**

The Intersection over Union (IoU) metric is a popular accuracy measure in object detection and segmentation applications. It gives a quantifiable measure of how closely the predicted bounding box/segmentation mask matches the ground truth and can be used for model evaluation, training, and tuning.