**What is deep learning?**

Deep learning is subset of machine learning which in turn is a subset of AI. In it, the model mimics the human behaviour. It is type of ML inspired by human brain which is represented as neural network. Deep learning differentiates between objects automatically using neural network without human intervention.

**What is Neural Network and its types?**

Neural Networks are base of deep learning where the algorithms are inspired by structure of brain. They take in data, train themselves to recognize the pattern in the data and predict the outputs for new sets of similar data. They process huge amount of data

Types of Neural networks are:

* Artificial Neural Network (ANN) – mimics the human part of brain that process huge amount of data.
* Recurrent Neural Network (RNN) – mimics the understanding of different languages, emotions, sentiments of the human brain.
* Convolutional Neural Network (CNN)/ Computer Vision (CV) – mimics the understanding of vision of the human brain.

**What is CNN?**

It is a type of neural network that mimics the understanding of vision of the human brain. If we imagine trying to teach a computer to see then instead of looking at the whole image at once, a Convolutional Neural Network (CNN) will look at small parts of the image at a time, like scanning with a tiny magnifying glass. It uses special filters to find simple patterns like edges and corners in these small parts. Then, it combines these simple patterns to recognize more complex features like eyes, noses, and eventually, entire objects. By looking at the image in these small pieces and gradually building up its understanding of what's there, the CNN becomes very good at tasks like identifying objects in photos.

**Short notes about the pipeline of the project:**

1. Data collection and data loading - get data from Kaggle platform. The dataset will have 3 directories – train, test and validate.
2. Image processing and image augmentation – scaling different images into a common dimension, and create multiple versions of the same image by rotating, flipping, or zooming it so that the model can be generalized in nature.
3. Build a CNN model – use built-in libraries like TensorFlow to build a model.
4. Test, evaluate and predict – test the data feed.