**Week - 1 Assessment – Forest Fire Detection**

**Deep Learning :**

* Deep Learning is a subset of machine learning that uses artificial neural networks with many layers to learn complex patterns from data.
* It’s used in things like image recognition, speech processing and language translation.

**Neural Networks and Its Types:**

* A **Neural Network** is a system of algorithms modeled after the human brain. It processes data through layers of connected nodes.
* **Types of Neural Networks:**

**1. Artificial Neural Network(ANN):** Used for prediction.

**2. Convolutional Neural Network (CNN):** Used for **image processing**.

**3. Recurrent Neural Network (RNN):** Used for **things that happen in order.**

**CNN :**

* A Convolutional Neural Network (CNN) is a type of neural network mainly used for analyzing images.
* It looks at small parts of the image, finds, and combines them to understand the whole image.

**Project Pipeline:**

**1. Data Collection and Data Loading:** Using kaggle.com for dataset. Link: https://www.kaggle.com/datasets/elmadafri/the-wildfire-dataset

**2. Image Processing and Image Augmentation:**

**3. Build CNN(tensorflow):** Train, Test and Validate the model

**4. Test and Evaluate**

**Workflow:**

Image(train) -> CNN -> Validate

And last evaluate the accuracy of the model output.