

# Assignment 3

- In this assignment, you will train a model from scratch on the CIFAR10 dataset and perform image classification.
- Submit the assignment as a Jupyter notebook
- You can refer to the following resources:  
<https://youtube.com/playlist?list=PLqnsIRFeH2UrcDBWF5mfPGpqQDSta6VK4&si=ZXeT09xBwJomLcHI> (lec 1 to 17)  
<https://huggingface.co/learn/computer-vision-course>

## **Assignment outline:**

1. Setting Up the Environment:
  - a. Import necessary libraries like PyTorch, Numpy and Matplotlib
  - b. Ensure you have access to a Gpu for faster training (you may use Google Colab or Kaggle)
2. Data Preprocessing:
  - a. Load the CIFAR-10 dataset and split it into training, validation and test sets
  - b. Normalize the image pixels
3. Build the model:
  - a. Build any model architecture of your choice (you may use a simple CNN architecture as well).
  - b. Choose an appropriate loss function and optimizer
4. Training the model:
  - a. Perform the training loop
  - b. Plot training and validation loss

5. Model evaluation:

- a. Evaluate the model by simply calculating the accuracy on the test set
- b. Save the model in a file named model.pth