

LAB No. 9

Convolution Neural Network

Open Ended LAB

Build a Convolutional Neural Network (CNN) using Python and TensorFlow/Keras to classify images of Cats and Dogs.

Instructions:

1. Collect or download a dataset containing:
 - **500 images of Cats**
 - **500 images of Dogs**
2. Organize the dataset as:
dataset/
 cats/
 dogs/
3. Write Python code to:
 - Load and preprocess images (resize to 150×150)
 - Split into training (80%) and testing (20%)
 - Build a CNN model
 - Train the model for 10–20 epochs
 - Plot training & validation accuracy and loss
 - Evaluate model performance using a confusion matrix
 - Predict whether a new input image is Cat or Dog
4. At the end of the program, show the prediction result for a test image:
 - "This image is a CAT"
 - or
 - "This image is a DOG"
5. Submit your Python code, dataset, graphs, and output screenshots.

LAB Assessment

Student Name		LAB Rubrics	CLO3 , P5, PLO5
		Total Marks	10
Registration No		Obtained Marks	
		Teacher Name	Dr. Syed M Hamedoon
Date		Signature	