

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 150x150)
- 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	