

23-9-22
Build a CNN Model to classify cat or dog image
AIM: To implement CNN to build a CNN model to classify a cat or dog image.

Pseudo Code

- Initialize parameters
- Define input of shape = $[64, 64, 3]$ → image resolution chosen for it uniformly
- Define no. of classes = 2
- Set batch size 1.0
- Load dataset
- Import cat & dog image from dataset
- Preprocess - resize all image to same dimension
- Normalize pixel values $[0, 1]$, to stabilize training
- split into training and validation set.
- Data Augmentation
 - Apply random flips, rotation, zooms.
- construct CNN architecture.
- convolution layer
- Activation RELU
- Pooling layer
- Repeat convolution + Pooling
- Compare Model
- Optimize
 - Loss function
 - Evaluation metric - Accuracy.
 - Train Model
 - Evaluate Model
 - calculate accuracy & loss on validation set

Prediction

For a new image:

Resize to (64, 64)

Normalize pixel

Passing

If output $< 0.5 \rightarrow$ cat Else \rightarrow dog.

Observation

Training accuracy improved

Validation accuracy peaked 80-85%.

Loss decreased significantly confirming effective feature learning from CNN

Result:

The experiment was successfully executed.

30/9

Imported

reptiles -

- Hildesheim -

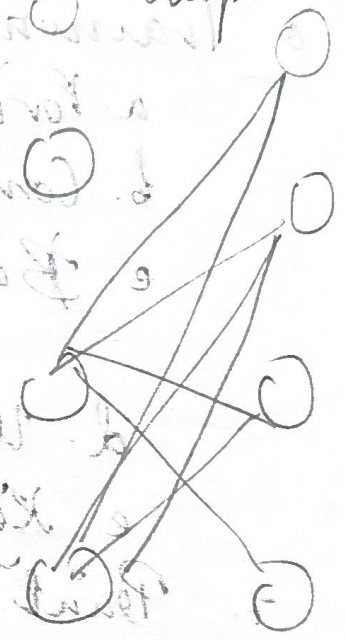
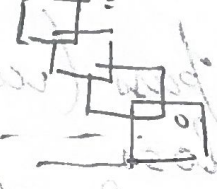
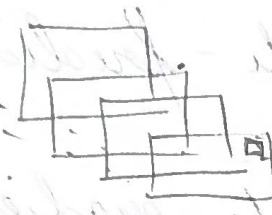
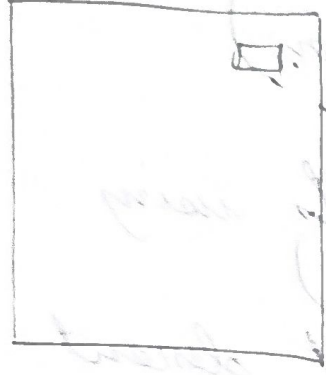
regal. In the -

Input

convolutive

Poolin

out/put



Feature Extraction

classification

2018-12-12

[illegible]

Nov 9
 I have been thinking of writing to you for some time but have been so busy that I have not had time to do so. I am now in the hospital and am feeling much better than I have been for some time. I am still unable to walk but am able to sit up in bed and to read and write. I am very grateful for the interest you have shown in me and for the letters you have written to me. I hope to be able to go home soon but I do not know when that will be. I am still very weak and I am still unable to walk but I am feeling much better than I have been for some time. I am still unable to walk but I am able to sit up in bed and to read and write. I am very grateful for the interest you have shown in me and for the letters you have written to me. I hope to be able to go home soon but I do not know when that will be. I am still very weak and I am still unable to walk but I am feeling much better than I have been for some time.

o/p: Epoch 1 - Loss : 208.7533 - Acc : 0.64
 Epoch 2 - Loss : 195.6160 - Acc : 0.67
 Epoch 3 - Loss : 181.9068 - Acc : 0.69
 Epoch 4 - Loss : 171.0776 - Acc : 0.69
 Epoch 5 - Loss : 180.1082 - Acc : 0.70

