

1.5em 0pt

IMAGE CLASSIFIER

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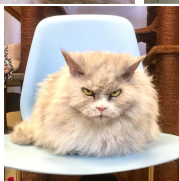
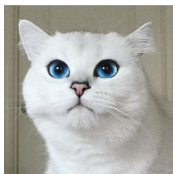
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OBJECTIVE

Image classification (Dogs v/s Cats) using KNN algorithm



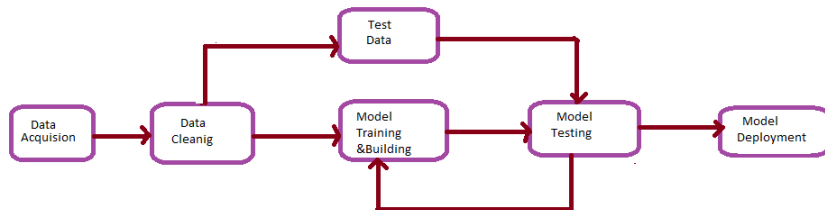
INTRODUCTION

- ▶ Machine learning is the study of computer algorithms that improve automatically through experience.
- ▶ The k-nearest neighbors (KNN) algorithm is a simple, easy-to-implement supervised machine learning algorithm.
- ▶ It stores all the available cases and classifies the new data or case based on a similarity measure.

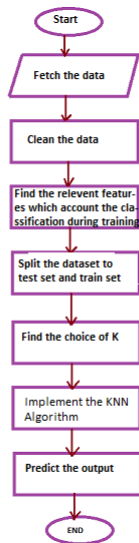
METHODOLOGY

- ▶ Identifying the problem
- ▶ Defining the problem : "Image classification (Dogs v/s Cats) using KNN algorithm".
- ▶ Fetching resources of images.
- ▶ Designing the algorithm
- ▶ Implementation
- ▶ Testing and debugging
- ▶ Result analysis

FLOWCHART



DATA-SET PREPROCESSING



Algorithm : KNN ALGORITHM

Step 1 :Start

Step 2 :Fetch the data set.

Step 3 : Select the number K of the neighbors.

Step 4 : Calculate the Euclidean distance of K number of neighbors

Step 5: Take the K nearest neighbors as per the calculated Euclidean distance.

Step 6 :Among these k neighbors, count the number of the data points in each category.

Step 7 :Assign the new data points to that category for which the number of the neighbor is maximum.

Step 8 :Our model is ready.

Step 9 :End

SAMPLE OUTPUT

Wrongly classified as dog



Correctly classified as cat



Correctly classified as dog



Wrongly classified as cat



OBSERVATION

K	ACCURACY(%)
1	56.26
3	57.29
5	59.54
7	59.24
9	59.94
11	60.49
13	60.24

RESULT

Images have been classified as dogs and cats with an accuracy of 60.49($k = 11$) using KNN algorithm

CONCLUSION

- ▶ Applying KNN to color histograms achieved 60.49 accuracy.
- ▶ Out of 20 test cases,12 were correctly classified.
- ▶ Hence we conclude that colour histograms may not be the best feature to classify images using KNN algorithm.

REFERENCES

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THANK YOU