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IMAGE CLASSIFIER

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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.[1] [2]
- The k-nearest neighbors (KNN) algorithm is a simple, easy-to-implement supervised machine learning algorithm.[1]
- It stores all the available cases and classifies the new data or case based on a similarity measure.[1]

METHODOLOGY

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

Algorithm : MAIN FUNCTION

Step 1 : Start
Step 2 : Input the image to be classified.
Step 3 : Implementaion of KNN algorithm
Step 4 : Return result.
Step 5: End

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 : Result to main function.
Step 10 : End

RESULT

The input image is classified as dog or cat with an accuracy of 56.44

CONCLUSION

- Applying KNN to color histograms achieved 56.44
- Out of 10 test cases,6 were correctly classified.
- Hence we conclude that colour histograms may not be the best feature to classify images using KNN algorithm.

REFERENCES

- [1] Adrian Rosebrock,"KNN classifier for image classification",Aug 8,2016[online].Available:ttps://www.pyimagesearch.com/2016/08/08/k-nn-classifier-for-image-classification/[Accessed:Aug.24,2016]
- [2] (2019,July 19).K-Nearest Neighbours Algorithm [online].Avaliable : https://en.wikipedia.org/wiki/K-nearestneighborsalgorithm

THANK YOU