THE UNIVERSITY OF TEXAS AT ARLINGTON

CSE 5334 Data Mining

Project One Page Idea

Image classification

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Synopsis...

I have taken up the task- **Image Classification** as my project base idea. I am developing a machine learning algorithm to classify images on the natural image's dataset. An image classification model is taught to recognize various image categories.

Why Image Classification:

Image classification is a task in which the system analyzes an incoming image and assigns a label to it. It helps in intelligent systems to be aware of surroundings in distinguishing various objects and persons from the incoming video or image feed.

Having said that, this concept grabs my interest as it involves the above features and my curiosity to explore this topic in greater depth serves as a driving force to take up this choice as a part of my project.
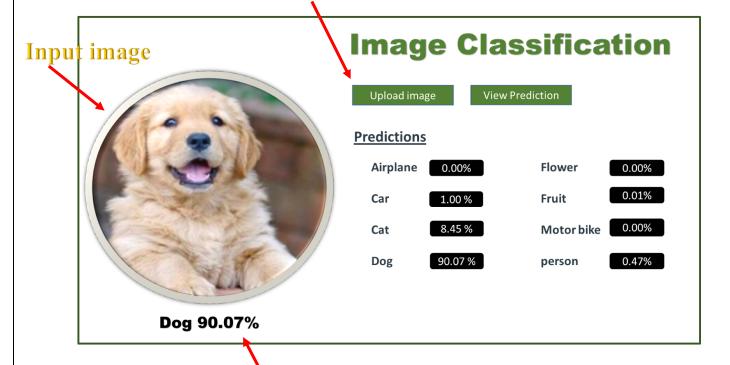
Datasets used:

Following is the link of the datasets that are used to train and test the classifier: https://www.kaggle.com/datasets/prasunroy/natural-images

Features:

1.This system can classify the images among the class-names namely – 'airplane', 'car', 'cat', 'dog', 'flower', 'fruit', 'motor bike' and 'person'.

2. An application is developed where the user can upload the image from the given set of Image classes mentioned above and the algorithm runs in the background to accurately predict the image that has been uploaded with a confidence score.

3.In the output screen, the percentages of the possibility of the uploaded image being each of those categories is also printed before the final prediction as shown below in the outline of the project application.

Sample Application UI:

Upload image file

Input image

Image Classification

Upload image   View Prediction

Predictions

Airplane	0.00%	**Flower**	0.00%
Car	1.00 %	**Fruit**	0.01%
Cat	8.45 %	**Motor bike**	0.00%
Dog	90.07 %	**person**	0.47%

Dog 90.07%

Output/ prediction