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Research paper



Image Processing and Restriction of Video Downloads Using Cloud

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Abstract

Flower image classification using deep learning and convolutional neural network (CNN) based on machine learning in Tensor flow. Tensor flow IDE is used to implement machine learning algorithms. Flower image processing is based on supervised learning which detects the parameters of image. Parameters of the image were compared by decision algorithms. These images are classified by neurons in convolutional neural network. Video processing based on machine learning is used in restriction of downloading the videos by preventing the second response from the server and enabling the debugging of the video by removing the request from the user.

Keywords:*Image detection; convolutional neural network (CNN); Machine learning; Video restriction; Debugging, deep neural network.*

1. Introduction

Using the remote server's network from the internet for the storage and processing of the data other than using local server or drive. It is like a virtual machine where used by the companies to compute resource, storage or an application as a utility rather than maintaining local infrastructures. Organizations can scale up as registering needs increment and scale down as requests decrease which may eliminates the need for investments in local infrastructure which may or may not be active. The computer resources will be measured at a level by enabling the users to pay only for resources and work. Cloud specialist organizations regularly actualize excess assets to guarantee flexible capacity and to keep clients imperative workloads running over different worldwide locals. Associations can move certain workloads to or from the cloud or to various cloud stages as wanted or consequently for better cost investments funds to utilize new administrations for their development. Image is classified by parameters of the object in image

Artificial Intelligence: The theory and development of computer systems that can be able to perform tasks normally acquiring human intelligence, like visual perception, speech recognition, decision making [7-13] and translating the languages.

Machine learning: According to the author Samuel in 1959, gives "computers the ability to learn without being explicitly programmed". It is the study of pattern recognition and computational learning theory in artificial intelligence. Learning and prediction on data by machine on using decision algorithms.

Deep learning: It is also known for hierarchical learning or deep structured learning, which is the application of artificial neural networks. Learning tasks that contains more than one hidden layer. Deep learning architectures such as deep neural networks have been applied to field including computer vision, speech recognition, audio recognition, machine translation where they produces results compared to and in some tasks superior to human experts.

Machine learning in cloud computing

Cloud Computing provides an effective alternative to enhance computing power machine algorithms are powerful analytics method that allow machines to recognize patterns and facilitate human learning. The performance of individual machine learning algorithms which each cloud computing framework which remains unknown. The absence of a powerful determination approach coordinating info information with viable machine learning calculations limits the ability of practitioners to make effective use of cloud computing.

2. Some of the Machine Learning Algorithms:

Linear regression: it is further divided into two types which are simple linear regression and multiple linear regression, it is based on the estimation of the real values of the processed regression line and it uses the simple slope intercept equation which is $Y=A*X+B$. where the Y represents the dependent variable and X represents the independent variable such that A is the slope and B is the intercept of the assumed or given regression line.

Logistic regression: compared to the linear regression here the logistic regression represents the estimation of discrete values which are binary values (0/1), yes/no, true/false. Where odds values are calculated by dividing the P (probability of the event occurrence) to the 1-p (probability of not even occurrence).

Tensor flow

It is an open source software library for numerical computation using data flow graphs. Nodes in the graph represent mathematical operations. The computational graph stages of 1) Building the computational graph 2) Running the computational graph.

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Let's construct an easy computational graph, where each node takes 0 or more tensors as inputs and produces best one tensor as an output. One type of node is a steady. Like all TensorFlow constants, it takes no inputs, and it outputs a value it stores internally. A session encapsulates the control and country of the TensorFlow runtime.

Docker

For the processing of all these we use the "Docker" tool box for quick setup of the Docker environment on the windows system. It use Docker to eliminate "works on machine". It automates the repetitive tasks of setting up and configure developing environments so that developers can focus on what matters building great software.

CNN: Convolutional neural networks.These are the networks which acts like passing the information of sensitivity from one part to another part of the body. These networks carry the sensual control of the imaginary nodes which makes the remote patterns to get targeted from one node to another. Like way all the patterns of the image would be carried by using these CNN'S.

SLIC: Simple linear iterative clustering helps the image get super pixel such that the pixels of the image could be visualized at a minimum point, then these visualized patterns are scanned using the CNN such that they will carry information to the outputs.

Description:

Image classification is recognition of the images of what image it is, here we are recognizing the images of flowers. Flowers including the tulips, sunflowers, roses, dandelions, daisy. Only these flowers can be recognized for the program that which we have built. The main part of the classification is training the machine by using the as many flowers as possible but as only of same kind (ex: to recognize the flower which is rose we need to train the code by using 100's of rose images) such that the machine will get the parameters of the flower rose, such that if we give the same flower images with different style which is not trained then automatically the code will recognize the images that which we have trained. Likewise all the images that which have to get recognized need to train all those images using the different types of same images of different kind so that the images will get trained by those parameters. Like this we can be able to train the machine any kind of item that which has to get recognized. The training will make the machine to read and store. The parameters which can be used to recognize later. For this recognition we use the (CNN) where this algorithm helps in recognizing the nodes of the image and sent the information to the machine predicting the values.

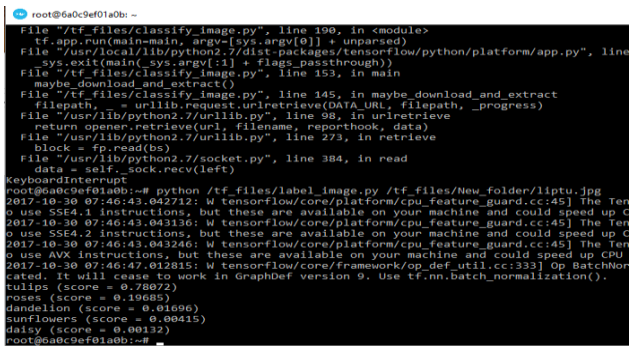
Working

In the processing of the image the environment which we have used is the docker, in the docker the image processing is as follows

1. Tulips



Output-



2. Dandelions



Output-



3. Roses



Output-



4. Daisy



Output

```
root@6a0c9ef01a0b:~# python /tf_files/label_image.py /tf_files/New_folder/21652746_cc379e0ea
2017-10-30 07:48:52.354576: W tensorflow/core/platform/cpu_feature_guard.cc:45] The TensorFl
o use SSE4.1 instructions, but these are available on your machine and could speed up CPU co
2017-10-30 07:48:52.355023: W tensorflow/core/platform/cpu_feature_guard.cc:45] The TensorFl
o use SSE4.2 instructions, but these are available on your machine and could speed up CPU co
2017-10-30 07:48:52.355121: W tensorflow/core/platform/cpu_feature_guard.cc:45] The TensorFl
o use AVX instructions, but these are available on your machine and could speed up CPU compu
2017-10-30 07:48:54.902352: W tensorflow/core/framework/op_def_util.cc:333] Op BatchNormWith
cated. It will cease to work in GraphDef version 9. Use tf.nn.batch_normalization().
daisy (score = 0.98996)
sunflowers (score = 0.00788)
dandelion (score = 0.00153)
tulips (score = 0.00058)
roses (score = 0.00004)
```

From the above images the input flowers that we have mentioned is we have used for the classification and their output is given in the score format as if we observe the highest score is the image that which has been classified which is at top of the other images that which it can recognize or that which we have trained. Consider tulips from the first image, in the output the tulips got the highest score which is 0.78072 for that image (score for the other images may vary) and stands at top showing the high score than the other images. Same for the other images also.

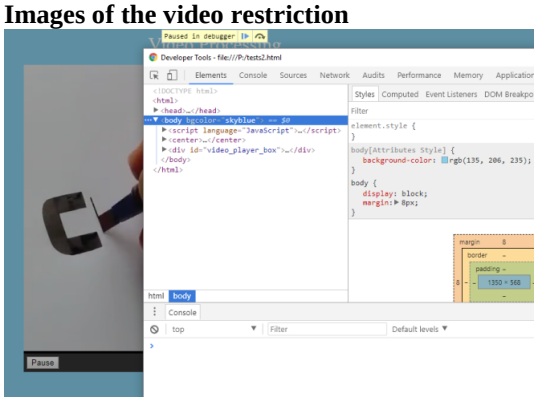
Values of the above recognized images

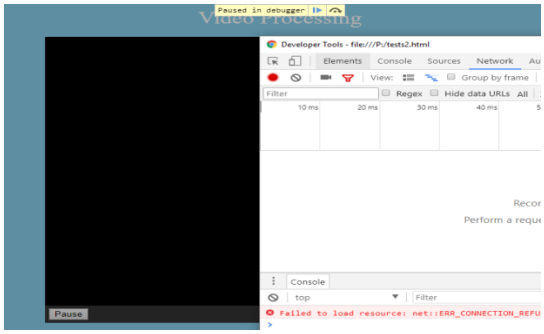
Image	Value
Tulips	0.78072
Dandelions	0.95072
Roses	0.96419
Daisy	0.98996

To change the way a picture fits in your document, click it and a button for layout options appears next to it. When you work on a table, click where you want to add a row or a column, and then click the plus sign. Reading is easier, too, in the new Reading view. You can collapse parts of the document and focus on the text you want. If you need to stop reading before you reach the end, Word remembers where you left off - even on another device.

Click Insert and then choose the elements you want from the different galleries. Themes and styles also help keep your document coordinated. When you click Design, and choose a new Theme, the pictures, charts, and SmartArt graphics change to match your new theme. When you apply styles, your headings change to match the new theme. Save time in Word with new buttons that show up where you need them.

Images of the video restriction





These above two images refers to first module. Where as in the first image we observe that when we opened the dev tools the running of page and video have been paused and while refreshed in the network(in the image 2) the video have been stopped which means the server have been stopped responding for opening the dev tools. It is because the network consists of the segments which can be able to download in any of the download manager but here when the server get stopped the segments and index become invisible because of response have been stopped by the server, and there will be no chance to download the file using the video index file. This is not highly secured but one way to stop the video for the download purpose. And for the file that we have provided is just a sample video and it will be played only in the player which is connected to the server and it will not play anywhere unless the video player get responded.

Single server response:

User is restricted only server response for buffering of video and stop response for video downloading. This is a type of queuing technique.

Debugging:

Video player code is stopped at certain time when ever user tries to developer tools, if user opened the developer tools, response from the server stops and that particular type of response is known as second response.

Video player customization:

A customized video player is used and does only support for playing video. No action will be performed for right click move action.

Video cloud storage:

The server program is linked to the video cloud storage where the program enables the single for the user to get the video played/buffered and does not allow video to respond for the second request from the same IP address and the web gets reloaded and refreshed.

Html web page:

A web page is related in order to view the video and restrict the downloading by using any kind of video player. Web page is customized according to the user convenience.

Local server:

Initially local server is used to store the video and to demonstrate the video restriction from downloading and next uploaded into cloud.

3. Conclusion

Using machine learning there is lot of uses on Deep learning in computer, which make recognition of image ease for computers. This image recognition can develop on various fields using different machine learning algorithms by building own different types of neural networks based on the type of image classification. This ML make artificial intelligence to think ease by giving thousands of sample inputs to compute. Pattern recognition using different decision making algorithms make more specific to virtualize the image and process to identify. Video downloading restriction to secure the video from the downloader using debugging technique is to give security for the video. Single server response helps to restrict the download of video and can assure the video from downloading.

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