TECHERA 2020

Computer are like Humans they do everything except think

- John Von Neumann

Madanapalle Institute of Technology & Science

(UGC- Autonomous)

Department of Computer Science & Engineering

MESSAGE FROM THE CORRESPONDENT

I feel exhilarated that the Department of Computer Science &Engineering of MITS is bringing out a magazine called TECHERA from the year 2015. This Magazine brings out the intellectual brilliance in various new techniques introduced in Information Technology industry.

``HARD WORK, SINCERITY, DEDICATION  AND ENTHUSIASTIC DEVOTION TO WORK WILL FETCH YOU UNBOUND SUCCESS, MAY THE LORD SHOWER HIS BLESSINGS ON YOU``

I heartily congratulate the students and the staffs of CSE Department and Wish them a grand success.

**Dr. N. VijayaBhaskarChoudary
Correspondent**

MESSAGE FROM THE CHAIRMAN

Your blessings be bestowed upon us leading into the right path in organizing Magazine "TECHERA"by the Department of Computer Science& Engineering students and faculty of **MITS** and thereby make this magazine a grand success.

Chairman

Sri. N. Krishna Kumar

MESSAGE FROM THE PRINCIPAL

I feel delighted about the magazine "TECHERA" to be hosted by the Department of Computer Science& Engineering of MITS. On this magnanimous occasion, I congratulate all the students and faculty members of department for their great efforts and coordination in bringing out the magazine a great success.

Principal

Dr. C. Yuvaraj

MESSAGE FROM THE
HEAD OF THE DEPARTMENT

TECHERA is dedicated for addressing the emerging topics and challenges in the area of technology. **TECHERA** is to create great awareness on new innovative ideas and technologies. I wish the readers of **"TECHERA"** for their support and also can provide the useful feedback to improve the standards of magazine.

Dr. Mahaboob Basha Shaik

Head of the Department

(CSE)

EDITORIAL DESK

The annual release of the department magazine **"TECHERA – 2020",** mark the spirit of exploration among students in an environment of erudition.

This year's edition of "**TECHERA - 2020**" focuses on current trends in Computer Science and Information Technology which are the major rays of hope for developing a new world of science. It is a collection of information and facts, featuring the recent developments of fascinating and conceptual communication.

The editorial team owes its gratitude to all who have made "**TECHARA - 2020",** a scintillating event.

Editors

ABOUT MITS

Madanapalle Institute of Technology & Science is established in 1998 in the picturesque and pleasant environs of Madanapalle and is ideally located on a sprawling 26.17 acre campus on Madanapalle - Anantapur Highway (NH-205) near Angallu, about 10km away from Madanapalle.

MITS, originated under the auspices of RatakondaRanga Reddy Educational Academy under the proactive leadership of and **Dr. N. VijayaBhaskarChoudary, Secretary & Correspondent** and **Sri. N. Krishna Kumar, Chairman** of the Academy.

MITS is governed by a progressive management that never rests on laurels and has been striving conscientiously to develop it as one of the best centers of Academic Excellence in India. The Institution's profile is firmly based on strategies and action plans that match changing demands of the nation and the student's fraternity. MITS enjoys constant support and patronage of NRI's with distinguished academic traditions and vast experience in Engineering & Technology.

ABOUT DEPARTMENT

The Department of Computer Science & Engineering offers 4-year degree, which is established in the year 1998. The course is flexible and has been structured to meet the evolving needs of the IT industry. The Department is offering M. Tech Computer Science & Engineering from the academic year 2007 - 2008. The Department has obtained UGC-Autonomous Status in the year 2014 and is running the Programmes successfully meeting all the requirements. The College Academic Council, Board of Studies of the department strive to provide quality education and most advanced curriculum and syllabus to make the students industry ready and excel in the contemporary business world.

The B.Tech. Programme under Department of Computer Science & Engineering was Accredited by the National Board of Accreditation (NBA) of All India Council for Technical Education (AICTE)

VISION

To excel in technical education and research in area of Computer Science & Engineering and to provide expert, proficient and knowledgeable individuals with high enthusiasm to meet the Societal challenges

MISSION

M1: To provide an open environment to the students and faculty that promotes professional and personal growth.

M2: To impart strong theoretical and practical background across the computer science discipline with an emphasis on software development and research.

M3: To inculcate the skills necessary to continue their education after graduation, as well as for the societal needs.

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

The Program Educational Objectives (PEOs) of the department of CSE are given below:

PEO1: Gain Successful Professional career in IT industry as an efficient software engineer.

PEO2: Succeed in Master/Research programmes to gain knowledge on emerging technologies in Computer Science and Engineering.

PEO3: Grow as a responsible computing professional in their own area of interest with intellectual skills and ethics through lifelong learning approach to meet societal needs.

PROGRAM SPECIFIC OUTCOMES (PSOs)

The Computer Science and Engineering Graduates will be able to:

PSO1: Apply mathematical foundations, algorithmic principles and computing techniques in the modelling and design of computer - based systems

PSO2: Design and develop software in the areas of relevance under realistic constraints.

PSO3: Analyze real world problems and develop computing solutions by applying concepts of Computer Science.

CONTENT

1 SEARCH RANK FRAUD AND MALWARE

INTRODUCTION

Ranking fraud in the mobile App market refers to fraudulent or deceptive activities which have a purpose of bumping up the Apps in the popularity list. Indeed, it becomes more and more frequent for App developers to use shady means, such as inflating their Apps' sales or posting phony App ratings, to commit ranking fraud. While the importance of preventing ranking fraud has been widely recognized, there is limited understanding and research in this area. To this end, in this paper, we provide a holistic view of ranking fraud and propose ranking fraud detection system for mobile Apps.Specifically, we first propose to accurately locate the ranking fraud by mining the active periods, namely leading sessions, of mobile Apps. Such leading sessions can be leveraged for detecting the local anomaly instead of global anomaly of App rankings. Furthermore, we investigate three types of evidences, i.e., ranking based evidences, rating based evidences and review based evidences, by modeling Apps' ranking, rating and review behaviors through statistical hypotheses tests.

◗ Apps Developer

Add App

In this module, the admin can add the applications. If the admin want add the new app, he will enter application name, app description, mobile type, users, file name, application images and click on register. The details will be stored in the database.

View application

In this module, when the admin clicks on view application, application name, app description, mobile type, users, file name, application images will be displayed.

Ranking fraud details

In this module, when admin clicks on ranking fraud details, ranking fraud count, user name, mobile type, application name, application ID, date and time will be displayed.

Evidence for frauds

In this module, when admin clicks on evidence for fraud details, user name,   mobile type, application name, application ID, fraud IP address, fraud system name, date and time will be displayed.
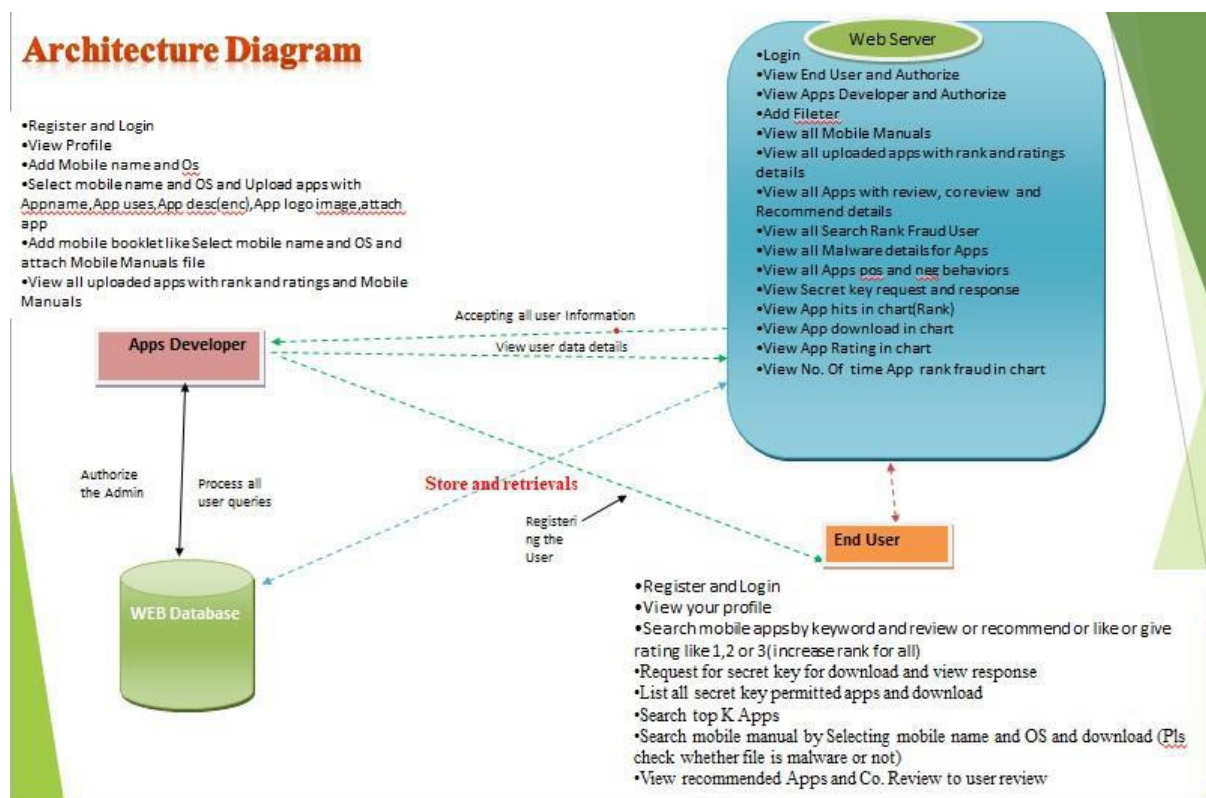
❶ User

In this module, there are n numbers of users are present. User should register before doing some operations. After registration successful he has to login by using authorized user name and password. Login successful he will do some operations like ,View Profile,Add Mobile name and Os,Select mobile name and OS and Upload apps with Appname,App uses,App desc(enc),App logo image,attach app,Add mobile booklet like Select mobile name and OS and attachMobile Manuals file,View all uploaded apps with rank and ratings and Mobile Manuals

Search and download mobile apps

In this module user can search the mobile app type and click on search then he will enter application name, application images, view details of mobile app, enters application ID enter the secret key and download the file.

and send response to user.

Architecture Diagram

.

ADVANTAGES:

➢ We build this work on the observation that fraudulent and malicious behaviors leave behind telltale signs on app markets.

➢ Fair Play achieves over 97% accuracy in classifying fraudulent and benign apps, and over 95% accuracy in classifying malware and benign apps.

➢ Fair Play significantly outperforms the malware indicators of Sarma et al. Furthermore, we show that malware often engages in search rank fraud as well: When trainedon fraudulent and benign apps, Fair Play flagged as fraudulent more than 75% of the gold standard malware apps

2.1.1 DISADVANTAGES

➢ Due to the huge number of mobile Apps, it is difficult to manually label ranking fraud for each app, so it is important to automatically detect fraud without using any basic information.

References
1. Google Play. https://play.google.com/.

2. Ezra Siegel. Fake Reviews in Google Play and Apple App Store. Appentive, 2014.

3. Zach Miners. Report: Malware-infected Android apps spike in the Google Play store.PCWorld, 2014.

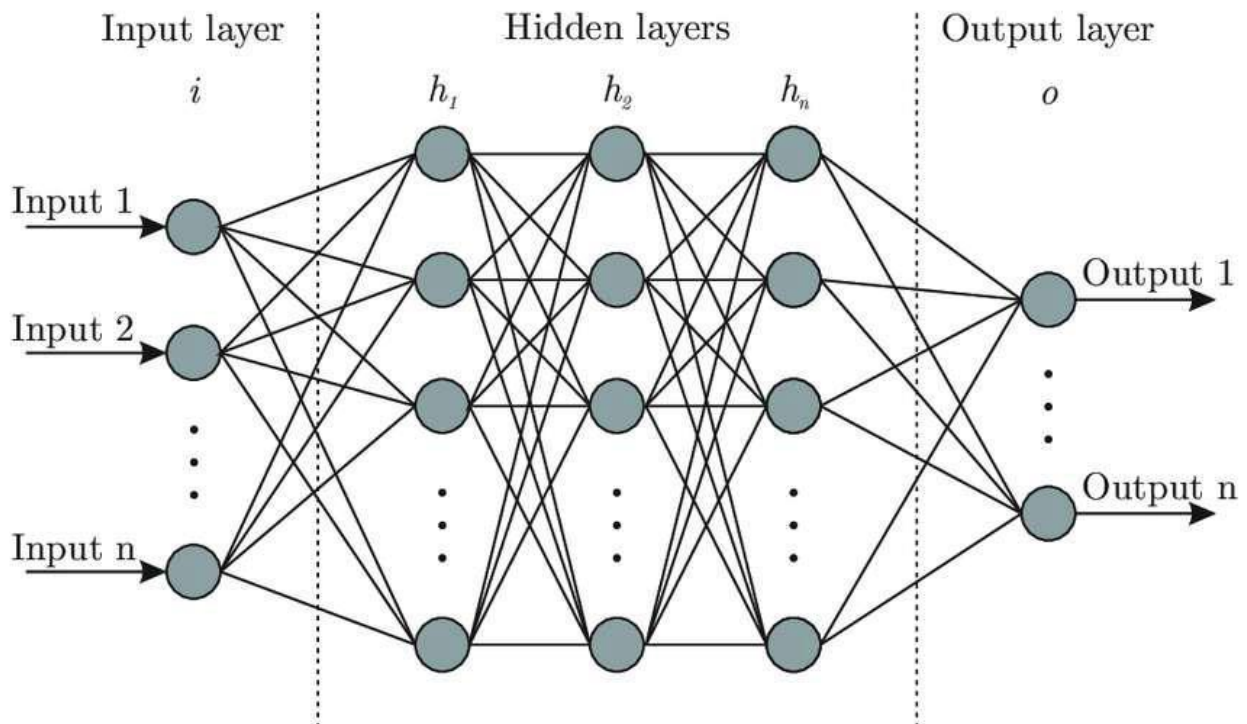4. Stephanie Mlot. Top Android App a Scam, Pulled From Google Play. PCMag, 2014.

Article by

M.LOKESH
C.NARASIMHULU
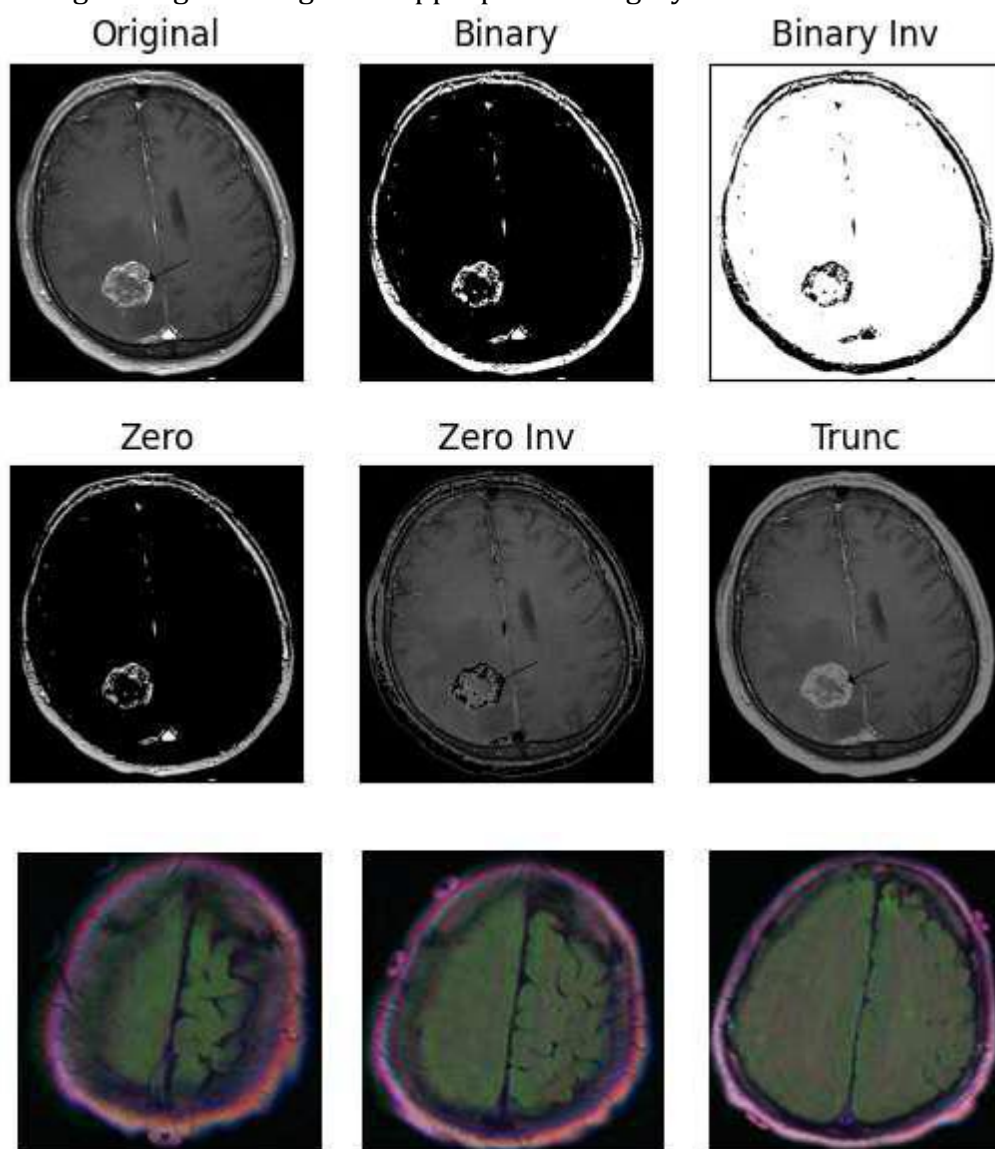**S.SUHAIL AHAMMED**

2.   2. Brain Tumor Detection

INTRODUCTION

Deep Learning is a branch of machine learning which is completely based on artificial neural networks. As neural networks are going to mimic the human brain so, deep learning is also a kind of mimic of human brain. In deep learning, we need to explicitly program everything. The concept of deep learning is not new. Deep learning is a particular kind of machine learning that achieves great power and flexibility by learning to represent the world as a nested hierarchy of concepts, with each concept defined in relation to simpler concepts, and more abstract representations computed in terms of less abstract ones. Deep Learning Algorithms are something called a neural network to find associations between a set of inputs and outputs. The basic structure is presented below.

A neural network is composed of input, hidden, and output layers – all of which are composed of „nodes". Input layers take in a numerical representation of data, output layers provide output predictions, while hidden layers are correlated with most of the computation. Today, comp uters can not only classify photos, but also describe the various elements present in pictures. This is done by the Figure.1 Deep Learning Network called Convolution Neural Networks (CNN), which actually learns patterns that naturally occur in photos. For increased accuracy, image classification using CNN is not effective. First and foremost, we need a set of images.

Deep learning is having a wide range of applications including Self Driving Cars, News Aggregation, Fraud News Detection, Natural Language Processing, Virtual Assistants, Visual Recognition, Image Analysis, Healthcare, Automatic Machine Translation, Automatic Text Summarization, and others as well. Among all the applications of Deep Learning, Healthcare is one of the most important application in today"s world. Having a huge impact in healthcare, deep learning can be used in many subfields such as analyzing blood samples, tracking glucose levels in diabetic patients, detecting heart problems, using image analysis to detect tumors, detecting cancerous cells and diagonising cancer and many more. Image Classification is one of the problems of image processing, computer vision and machine learning areas. Classification is a systematic arrangement in groups and categories depending on its features. Image classification is achieved by distinguishing the image into appropriate category based on the content of the image.

Segmentation of Brain tumor detected from MRI image

CONCLUSION

In this paper, a dynamic approach is proposed to analyze brain MRI images having tumor using Deep learning methodology. Nowadays, accidents causing brain tumor is increasing more and more   while the traditional brain tumor detection method may not be effective for all cases. Today, most researchers are focused towards extracting information from MRI scan of brain images using latest technologies available which includes Deep learning as well. However, this article is providing a practical approach to classify brain tumor images for those researchers who are willing to research on image segmentation and classification related works.

Article by
Hewan Shrestha
Chandramohan Dhasarathan

3.ALGORITHMIC SOLUTION FOR LEAF DISEASE DETECTION

INTRODUCTION

Leaves play a very important role in plant, because they are the primary source of photosynthesis, which is how plants feed themselves. Diseases in leaves may lead to the major cause of production and economic losses. They also lead to the reduction in both the quality and quantity of agricultural products. Leaf Diseases may occur due to Fungi, Bacteria and are primarily spread through wind. So, Detection of leaf diseases in early stage is very important. Farmers face many difficulties with the traditional approach of manual inspection as it is a slow process, requires high manpower and error-prone.

India's economy highly depends upon the farming output and agricultural productivity and plant leaf disease must be minimized. Early recognition of problems is important, but the manual inspection is slow, error-prone, and has high manpower and time requirements. Farmers don't have sufficient knowledge to find about disease and what type of treatment can be used to prevent diseases. Artificial intelligence can be used to extract leaf color, shape, or texture data and identify infections at a very early stage, thus reducing disease spread and increasing cure rates.

This project detects diseases in some of the vegetables leaves like Potato, Tomato, Corn and Cabbage. In this work, we used Transfer Learning with Convolutional Neural Networks. A fine-tuned, pre-trained deep learning model (Mobile Net) was retrained using a vegetable leaves dataset, from which useful features were extracted. The model serves its objective by classifying images of leaves into diseased category based on the pattern of defect.

Gray leaf spot   Northern leaf blight

Common Rust

VALIDATION

The following test case scenarios were used in the integrated system testing to prove the working of the developed system.

a)While logging in, use mail and password is validated.

b)While registering, if user gives the existing mail, it asks user to give another mail.

c)The images user uploads are stored in folder.

d)Using Transfer Learning for detecting diseases.

e) Displays the disease name, if disease is detected.

d)Displays the remedy for each disease.

e)Accuracy of above 96% is achieved.

ADVANTAGES

- Cheaper to operate.
- It can be scaled up quickly.
- Time minimising

DISADVANTAGES

- More Expensive.
- Difficult to scale up.

CONCLUSION

In this project, we have proposed a deep learning architecture with training on above 10000 images of vegetable leafs and testing on different 2000 images and that correctly classifies near or above 96% of the test images. Transfer Learning using fine-tuning the predefined MobileNet has greatly improved the performance of the model which otherwise did not produce satisfactory results on such small dataset. The number of epochs used was stopped at 25 because we had received a cut point after which the accuracy was not improving and the loss was not decreasing on both training and validation data.

Article by

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4. Sentimental Analysis of Hindi (SAH) Script Using NLP

Introduction

This Natural Language Processing, abbreviated as NLP, is a subfield of linguistics, computer science and artificial intelligence concerned with interactions between computers and human(natural) languages. Natural Language Processing (NLP) is used to apply machine learning algorithms to text and speech.NLP can be used to create systems like sentimental analysis, speech recognition, document summarization, machine translation, spam detection, named entity recognition, question answering, auto complete, predictive typing, information extraction, and so on. Nowadays, NLP is used to power search engines, filter spam and to obtain analytics in a fast and scalable manner. Sentimental analysis is the first NLP task that every Data Scientist needs to perform to understand the working mechanism and necessity of data in NLP. The article is organized with various sections it discusses an overview of sentimental analysis and its deviations by different authors is illustrated under section 2. The proposed approach is enhanced in section 3 with various pseudo normality and tokenization. In section 4 Practical Approach for the Sentiment Analysis evaluation is illustrated. At section 5 consists of discussion about the necessity of the proposed approach and its advantages. Finally the paper is concluded with sufficient and addressable limitations in sentimental analysis.

Proposed Sentimental Analysis of Hindi (SAH)

 Script Sentiment Analysis aims to estimate the sentiment of text based on its context. The sentiment of any text can be defined as a value that says whether the expected opinion is positive or negative. Using the techniques from Natural Language Processing (NLP), sentiment analysis field looks at users' expressions and in turn associate emotions with what the user has provided. Sentiment Analysis has become key component to systematically extract, identify, and quantify the data. Sentiment Analysis for Hindi script is hardly found which has immense possibilities it tends to revolutionize the surveys and review collections in Hindi with its growing applicability to a wide variety of applications from computer service to marketing. Hindi Sentiment Analysis generally consists of sample Hindi data collection, data processing, feature extraction, and classification. Feature extraction aims to detect and extract features that can be used to determine the meaning of a given HindiContextual-Data. The extracted features should be able to classify the data reliably into positive, negative or neutral class.

SAH Procedures with Pesudo Codes

Sentiment Analysis of any text can be performed by the following five steps.

Step 1: Tokenization

Step 2: Cleaning the data (Removing punctuation)

Step 3: Removing the Stop Words

Step 4: Classification

Step 5: Calculation

Expressability of SAH

Step 1: Tokenization Tokenization is the process of defining a paragraph into different set of statements or dividing a statement into different set of words.

Step 2: Cleaning the data (Removing punctuation) Cleaning the data means to remove those special characters/words which do not add any value to the analytics part of the sentence.

Step 3: Removing Stop Words Removing those words which do not add much value to the analytics part of the sentence.

```
Python 3.7.6 (default, Jan 19 2020, 22:34:52)
[GCC 9.2.1 20200117] on linux
Type "help", "copyright", "credits" or "license" for more information.
>>> from nltk.tokenize import word_tokenize
>>> from nltk.corpus import indian
>>> s = 'सुमन जाकर आने मित्र को कोन करें।'
>>> stop_words = set(indian.words('hindi_stopwords.txt'))
>>> word_tokens = word_tokenize(s)
>>> sentence = [w for w in word_tokens if not w in stop_words]
>>> sentence = []
>>> for w in word_tokens:
...     if w not in stop_words:
...             sentence.append(w)
...
>>> print(word_tokens)
['सुमन ', 'जाकर', 'आने', 'मित्र', 'को', 'कोन', 'करें।']
>>> print(sentence)
['सुमन ', 'जाकर', 'मित्र', 'कोन', 'करें।']
>>> []
```

Step 4: Classification We can model our data with bag of words or lexicons,
         which are dictionary of pre-classified set of words.

Step 5: Calculation This is the final step in the sentiment analysis of any text.
         This step corresponds to finding the final sentiment score of the sentence.

Conclusion

 In this paper, a dynamic approach is proposed to find sentiment analysis of Hindi text using Natural Language Processing. Nowadays, social media and news feed are common with Hindi text as well and it would become difficult in some situations for the peoples who are unfamiliar to the Hindi language. Most researchers are focused towards information extraction from those texts available over the internet. Many authors have given their approach towards analyzing sentiment from any text. However, in this article it is tested by providing a practical approach for analyzing the sentiment of Hindi text for those researchers who are willing to research on Indo-Aryan culture and scripts.
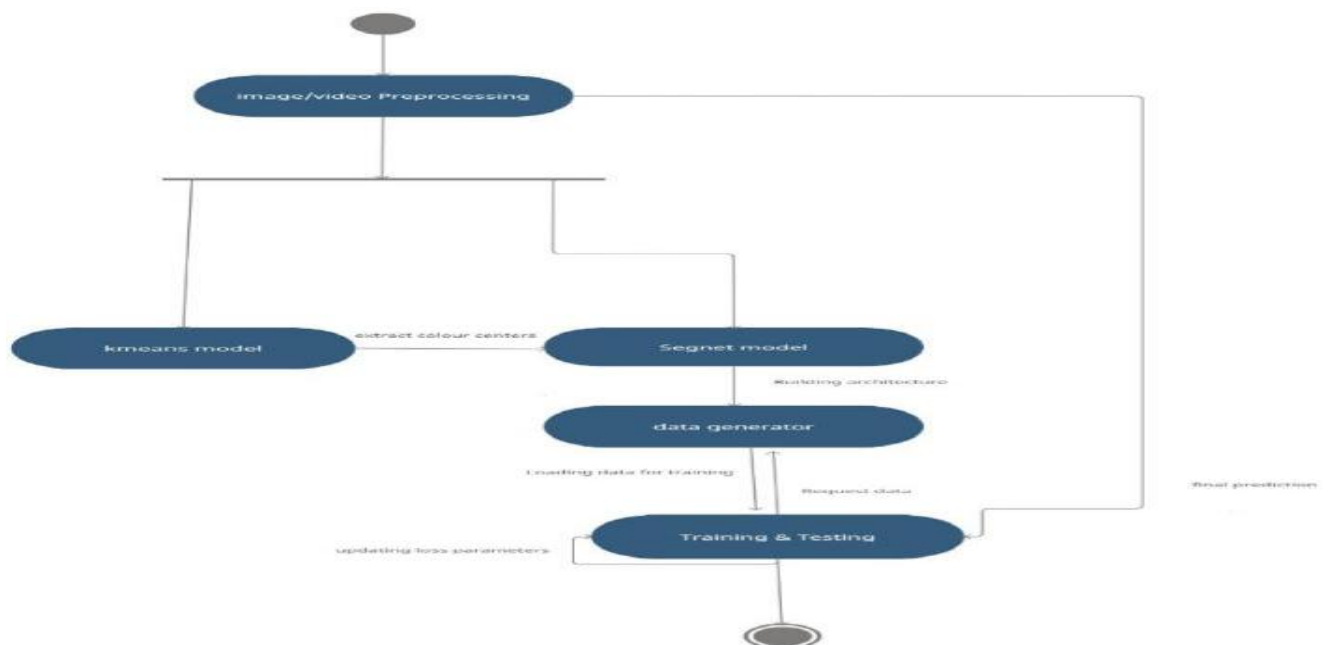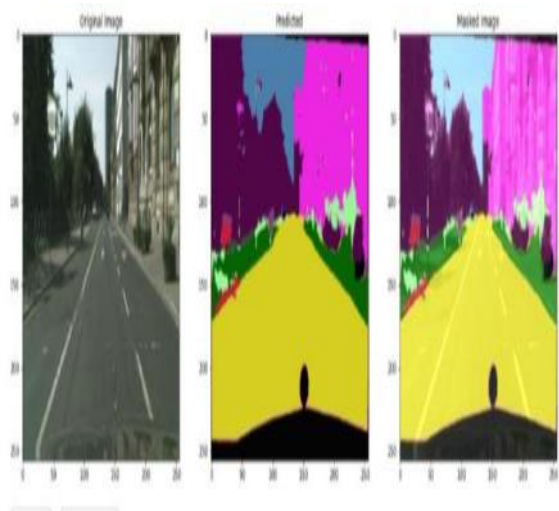
Article by

Hewan Shrestha

5.Semantic Segmentation for Self Driving Cars

Introduction

This project builds an encoder – decoder architecture, and where the networks are trained and tested on a sample of images using a cityscapes dataset. and can be one of the best approach for semantic segmentation that is increasingly making humans hold keen active interest for better results in terms of accuracy, computational time and inference time. The images of the objects that are present on the road, i.e., The images of vehicles, road, pedestrians etc. are given to the encoder-decoder architecture. The boundaries are extracted and the image is processed that result into a vector form. It is sent to the encoder part that results in decrease of the feature size then it is sent to the decoder that increases the resolution of the image.

Conclusion:

The model gives the pixel wise classification of the images that are required in self driving cars.The utilization of Max Pooling indices and the decoder to perform up sampling, gives the good predicted image that are used for self driving approaches. As it's an artificial intelligence era, there is a need for self-driving approaches for greater road safety, reduction in deaths, less traffic and no human error.

Themodel that we built gives the accurate segmentation of images. It is more accurate in terms of accuracy, computational time and inference time. This architecture uses pre training mechanisms to train the images that results in better accuracy. The accuracy of the model is over 88% with minimum loss.As it trained almost every training sample, the accuracy is better than remaining models that yields in good results.
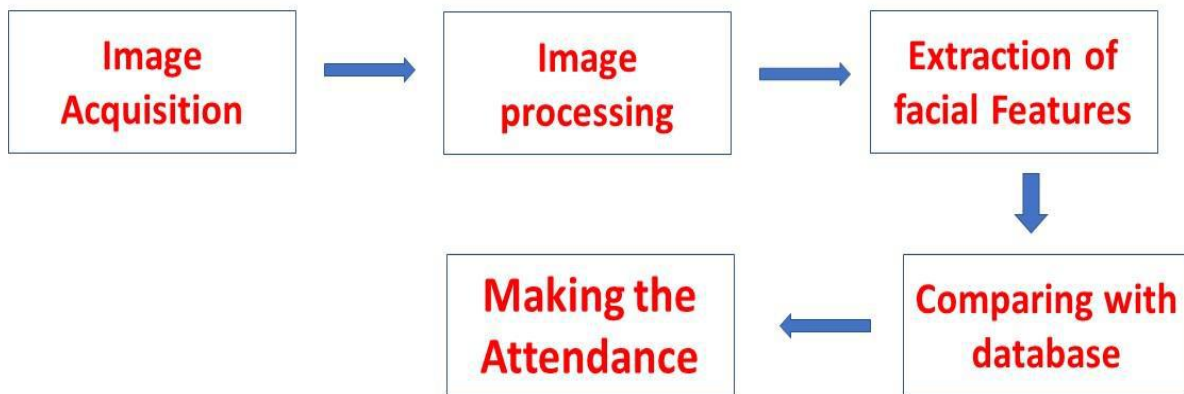
Article by

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6.Attendance Management System Using Face-Recognition

Introduction:-

The project aim to build an Image captioning model that In which web cam in class will recognize the face of students and update the records of attendance whether they are present or absent. This project is about attendance management system using face recognition. In this project the automatic attendance management will replace the manual method, which takes a lot of time consuming and very difficult to maintain. In this method the camera is fixed in the classroom and it will capture the image, the faces are detected and then it is recognized with the database and finally the attendance is marked. If the attendance is marked as absent the message about the student's absent is send to centralized server.

Image Acquisition → Image processing → Extraction of facial Features → Comparing with database → Making the Attendance

Smart Attendance Management System is simple and works efficiency. The system works automatically once the registration of individual student created by the administration.

This is the subject folder, subjects are to be filled according to time table once the time arrives for the corresponding subject, the system starts capturing images, detects the faces, compares the faces with existing database, mark attendance and generate excel sheet for the recognize students. Attendance system proved to recognize images in different angle and light conditions. The faces which are not in our training dataset are marked as unknown.

Conclusion: Thus, the aim of this paper is to capture the video of the students, convert it into frames, relate it with the database to ensure their presence or absence, mark attendance to the particular student to maintain the record. The Automated Classroom Attendance System helps in increasing the accuracy and speed ultimately achieve the high-precision real-time attendance to meet the need for automatic classroom evaluation. Automated Attendance System can be implemented in larger areas like in a seminar hall where it helps in sensing the presence of many people.

Article by

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