VISVESVARAYA TECHNOLOGICAL UNIVERSITY

JNANA SANGAMA CAMPUS, BELGAVI-590018

PROJECT REPORT

On

"FACE RECOGNITION ATTENDANCE SYSTEM "

Submitted by

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NAGENDRA PRASAD S	**4AL16IS031**
PRATHVI P SHETTY	**4AL16IS037**
PRIYANKA	**4AL16IS038**

In partial fulfillment of the requirements for the degree of

BACHELOR OF ENGINEERING

In INFORMATION SCIENCE AND ENGINEERING

Under the Guidance of

Mr. PRADEEP NAYAK

Assistant Professor

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ALVAS INSTITUTE OF ENGINEERING AND TECHNOLOGY

Moodbidri-574225, Karnataka

2019– 2020

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*Certified that the project work entitled "**Face Recognition Attendance System**" is a bonafide work* Carried out by,

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ABSTRACT

Automatic face recognition technologies have seen dramatic improvements in performance over the past years, and such systems are now widely used for security and commercial applications. An automated system for human face recognition in a real time background for a college to mark the attendance of their students. So Smart Attendance using Real Time Face Recognition is a real world solution which comes with day to day activities of handling students. The task is very difficult as the real time background subtraction in an image is still a challenge. To detect real time human face are used and a simple fast Principal Component Analysis has used to recognize the faces detected with a high accuracy rate. The matched face is used to mark attendance of the student. Our system maintains the attendance records of students automatically. Manual entering of attendance in logbooks becomes a difficult task and it also wastes the time. So we designed an efficient module that comprises of face recognition to manage the attendance records of students. Our module enrolls the student's face. This enrolling is a one time process and their face will be stored in the database. During enrolling of face we require a system since it is a one time process. You can have your own roll number as your usn which will be unique for each student. The presence of each student will be updated in a database. The results showed improved performance over manual attendance management system. Attendance is marked after student identification. This product gives much more solutions with accurate results in user interactive manner rather than existing attendance and leave management systems.

This project will show how we can implement algorithms for face detection and recognition in image processing to build a system that will detect and recognize frontal faces of students in a classroom. A face is the front part of a person's head from the forehead to the chin, or the corresponding part of an animal. In human interactions, the face is the most important factor as it contains important information about a person or individual. All humans have the ability to recognize individuals from their faces. The proposed solution is to develop a working prototype of a system that will facilitate class control for lecturers in a classroom by detecting the frontal faces of students from a picture taken in a classroom.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

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PROJECT REPORT

On

"HISTOPATHOLOGICAL IMAGE CLASSIFICATION OF BREAST CANCER USING KERVOLUTIONAL NEURAL NETWORKS"

Submitted by

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ABSTRACT

Histopathological Image Classification is a standard for diagnosing cancer. The classification helps in determining the best treatment among various treatment methods available. Breast Cancer classification are primarily constructed on histopathological photographs of the tissue in the tumor. In this project, we classify the histopathological images belonging to two major categories of tumor Benign and Malignant using KNN (Kervolutional Neural Network — Kernel Convolution Neural Network). Existing works using CNN mainly leverages activation layers as it only provides point-wise non-linearity, so we use KNN over CNN which provides indefinite complex actions of the human recognition system by making use of the kernel trick. It is a generalized version of convolution which can enhance the model's extent and can capture higher order of traits using reinforcement kernel functions short of any added parameters.

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PROJECT REPORT

On

"MEDICINAL PLANT IDENTIFICATION THROUGH LEAF STRUCTURE ANALYSIS"

Submitted by

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ABSTRACT

Plants are an indispensable part of our ecosystem and India has a long history of using plants as a source of medicines. Since the advent of modern allopathic medicine, the use of traditional medicine declined to a considerable extent. It is necessary to classify these plants so that it would be easy to select the right plant for the medicinal preparation or to study more about its characteristics. This project proposes a computer vision approach for the recognition of Ayurvedic medicinal plant species by processing the leaf image.

The proposed system uses Heralick features extracted from leaf images and the classification using Support Vector Machine classifier. This system is implemented with a python editor Anaconda both for front end and back end process. When the user uploads the leaf image he can get the name of the leaf and it classifies the leaf whether it is medicinal or not. The identification of the correct medicinal plants that go to the preparation of a medicinal product is very important in the Ayurvedic medicinal industry. The main characteristics required to identify a medicinal plant are the shape, color and texture of the leaf. The color and texture of both sides of the leaf contain deterministic parameters to identify the species. This document explores feature vectors from both the front and back of a green leaf along with morphological features to arrive at a unique and optimal combination of features that maximizes the identification rate.

A database of medicinal plant leaves is created from scanned images of the front and back sides of commonly used Ayurvedic medicinal plant leaves. The leaves are classified according to the unique characteristic combination. Identification rates of up to 99% were obtained when tested on a broad spectrum of classifiers. The above work has been extended to include dry leaf identification and a combination of feature vectors is obtained, using which identification rates above 94% have been achieved.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

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PROJECT REPORT

On

"SMART ASSISTANCE FOR DUMB AND DEAF"

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ABSTRACT

Communication is the main medium by which we can share our contemplations or pass on the message yet for an individual with handicap faces trouble in communication with typical person. The issues looked by the hard of hearing and unable to speak individuals right now and the challenges of their communication with typical people started our advantage and drove us to attempt to discover an answer for their challenges and to limit them as much as conceivable. Since they speak to a huge piece of society and they have to convey their thoughts in the easiest manner by straightforward gadgets. So, our venture points to connect this hole by empowering communication among moronic and hard of hearing individuals from one perspective and typical individuals on other hand by presenting an reasonable electronic gadget that makes an interpretation of the fingers presses into the content and discourse.

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PROJECT REPORT

On

"FAKE NEWS DETECTION USING MACHINE LEARNING TECHNIQUES"

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ABSTRACT

Social media for news consumption is a double-edged sword. On the one hand, its low cost, easy access, and rapid dissemination of information lead people to seek out and consume news from social media. On the other hand, it enables the wide spread of "fake news", i.e., low quality news with intentionally false information. The extensive spread of fake news has the potential for extremely negative impacts on individuals and society. Therefore, fake news detection on social media has recently become an emerging research that is attracting tremendous attention. Fake news detection on social media presents unique characteristics and challenges that make existing detection algorithms from traditional news media ineffective or not applicable. First, fake news is intentionally written to mislead readers to believe false information, which makes it difficult and nontrivial to detect based on news content; therefore, we need to include auxiliary information, such as user social engagements on social media, to help make a determination. Second, exploiting this auxiliary information is challenging in and of itself as users' social engagements with fake news produce data that is big, incomplete, unstructured, and noisy. Because the issue of fake news detection on social media is both challenging and relevant. We conduct a set of learning experiments to build accurate fake news detectors, and show that we can achieve accuracies of up to 90%. In addition, we provide comparative analyses of different Natural Language Processing Algorithms like Naïve Bayes, Support Vector Machine, Logistic Regression, and Random Forest.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

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PROJECT REPORT

On

"PREVENTING THE DISCLOSURE OF THE DATA LEAKS IN INTRA MAIL TRANSACTIONS"

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ABSTRACT

Data leakage is a growing insider threat in information security among organizations and individuals. A series of methods have been developed to address the problem of data leakage prevention (DLP). However, large amounts of unstructured data need to be tested in the Big Data era. As the volume of data grows dramatically and the forms of data become much complicated, it is a new challenge for DLP to deal with large amounts of transformed data. We propose an Adaptive weighted Graph Walk model (AGW) to solve this problem by mapping it to the dimension of weighted graphs. Our approach solves this problem in three steps. First, the adaptive weighted graphs are built to quantify the sensitivity of tested data based on its context. Then, the improved label propagation is used to enhance the scalability for fresh data. Finally, a low complexity score walk algorithm is proposed to determine the ultimate sensitivity.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

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PROJECT REPORT

On

"ILLUSIONPIN: SHOULDER-SURFING RESISTANT AUTHENTICATION USING HYBRID IMAGES"

Submitted by

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ABSTRACT

The problem of shoulder-surfing attacks on authentication schemes is addressed by proposing IllusionPIN (IPIN), a PIN-based authentication method that operates on touchscreen devices. IPIN uses the technique of hybrid images to blend two keypads with different digit orderings in such a way, that the user who is close to the device is seeing one keypad to enter her PIN, while the attacker who is looking at the device from a bigger distance is seeing only the other keypad. The user's keypad is shuffled in every authentication attempt since the attacker may memorize the spatial arrangement of the pressed digits. To reason about the security of IllusionPIN, we developed an algorithm which is based on human visual perception and estimates the minimum distance from which an observer is unable to interpret the keypad of the user. We tested our estimations with 84 simulated shoulder-surfing attacks from 21 different people. None of the attacks was successful against our estimations. In addition, we estimated the minimum distance from which a camera is unable to capture the visual information from the keypad of the user. Based on our analysis, it seems practically almost impossible for a surveillance camera to capture the PIN of a smartphone user when IPIN is in use.

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PROJECT REPORT

On

"AQUAPONICS SYSTEM: IOT BASED INNOVATIVE PLANT CULTIVATION AND FISH FEEDING SYSTEM"

Submitted by

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ABSTRACT

Getting appropriate water source for fish and plant cultivation seems difficult. Moreover, the agricultural production is decreasing due to narrower lands so that land- and water-saving technology combined with a variety of vegetable is important to produce maximum yield. Aquaponics is a sustainable agriculture system in a symbiotic environment by combining aquaculture and hydroponics. This water system should flow on the planting medium periodically to ensure the plants get the nutrients, while the water can be filtered properly by the medium. Aquaponics is a system which amalgamates the aquaculture & hydroponics that grows fish and plants together in one system. It utilizes fish wastes to provide essential nutrients to the plants and in reciprocation the plants will purify the water and gives it back to the fishes. The purport of this paper is to build an efficient system by implementing aquaponics system by utilizing the technology of IOT (Internet of Things). By engendering an automated System with the avail of sensors interfaced with the Arduino board, it possible to automate fish victualing and water supply to the plants at the conventional interval of time. Subsisting system that coalesces these technologies must overcome the fundamental issues like cost, victuals quality control and circumscribed grow. In this paper we intend to propose a kit which contains all these features mentioned above, and that is auxiliary to provide the rudimental organic vegetation for the abode along with Aquaculture farmers and exporters conventionally face concerns cognate to data of their farm, while utilizing digital apps (Mobile Applications). Due to Rapid hypoxia of the aquaculture water is one of the important factors that cause large area death of the aquaculture animals. The monitoring for the dissolved oxygen (DO) of the aquaculture water is very important to the safety of the aquaculture production. An intelligent monitoring system for DO of the aquaculture water is designed which provides a powerful technology method for maintaining the DO level of the aquaculture water in a good range. This research designed a smart aquaponics system that could control and monitor the degree of acidity, water level, water temperature, and fish feed that were integrated with internet-based mobile application.

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PROJECT REPORT

On

"TRANSLATION OF KANNADA TEXT IMAGE TO ENGLISH TEXT BY PROCESSING OF IMAGE USING OCR"

Submitted by

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in partial fulfillment for the award of BACHELOR OF ENGINEERING in **INFORMATION SCIENCE AND ENGINEERING** of the **VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM** during the year 2019–2020. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the Bachelor of Engineering Degree.

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ABSTRACT

The Proposed project presents user friendly Web Application. This web application is useful for Tourists and Travelers. One of the features in this web application is, it enables Travelers and Tourists to easily capture the image written in Kannada language books pages, signboards, banners, hotel menus and currency convertor, etc. The built-in OCR converts the text embedded in the captured image into English text. It also provides translation facility so that Tourists can translate the Kannada Language into English language. There is no remote computing because the application has built in OCR suite as well as image processing suite both installed in the Android device. The main objective of this application is to help tourist to travel/navigate easily and freely in travelling place without any difficulty. Kannada is not widely known and is difficult to master. So, in order to make the Kannada language more accessible, we designed this application. This way Kannada text is easily available to those who are not familiar with it. The application captures the Kannada text image and recognizes it into Kannada text. Then translates it into English. This application is also designed to aid tourists and others to better experience Karnataka by providing a quick point and shoot way of translating Kannada boards and other texts.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

JNANA SANGAMA CAMPUS, BELGAVI-590018

PROJECT REPORT

On

"ACTIVE PREDICTION OF HEART DISEASE USING TECHNIQUES OF HYBRID MACHINE LEARNING"

Submitted by

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GOWTHAMI H R	4AL16IS016
M RAMAKRISHNA	4AL16IS026
RACHANA T	4AL16IS061

In partial fulfillment of the requirements for the degree of

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In INFORMATION SCIENCE AND ENGINEERING under the Guidance of

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ALVAS INSTITUTE OF ENGINEERING AND TECHNOLOGY

Moodbidri-574225, Karnataka

2019– 2020

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DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING

CERTIFICATE

Certified that the project work entitled "ACTIVE PREDICTION OF HEART DISEASE USING TECHNIQUES OF HYBRID MACHINE LEARNING" is a bonafide work carried out by

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ABSTRACT

Heart disease is one of the most significant causes of mortality in the world today. Prediction of cardio vascular disease is a critical challenge in the area of clinical data analysis. Machine learning (ML) has been shown to be effective in assisting in making decisions and predictions from the large quantity of data produced by the health care industry. We have also seen ML techniques being used in recent developments in different areas of the Internet of Things (IoT). Various studies give only a glimpse into predicting heart disease with ML techniques. In this paper, we propose a novel method that aims at finding significant features by applying machine learning techniques resulting in improving the accuracy in the prediction of cardiovascular disease. The prediction model is introduced with different combinations of features and several known classification techniques. We produce an enhanced performance level with an accuracy level of 88.7% through the prediction model for heart disease with the hybrid random forest with a linear model (HRFLM).

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

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PROJECT REPORT

On

"VOICE BASED E-MAIL FOR BLIND"

Submitted by

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In

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Under the Guidance of

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ABSTRACT

Communication play a very important role in the social life as well as professional life. People with disability like Visual, Hearing and Vocal have to face difficulty and considering the email as most pervasive form of communication can help to overcome the above problem Many modern day research focus on addressing the issue of one of the above challenges. Addressing the problem of people with Visual, Hearing and Vocal Impairment through a single aiding system is a tough job.

The project proposed by us focuses on finding a unique technique that aids the visually impaired by letting them hear what is represented as text and it is achieved by the technique that capture the image through a camera and convert the text available as voice signals. The paper provides a way for the people with hearing impairment to visualize/read which is in audio form by speech to text conversion technique and we also provide a way for the vocally impaired to represent their voice by the aid of text to voice conversion technique. All these three solutions were modulated to be in a single unique system.

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PROJECT REPORT

On

"CANDIDATE SELECTION USING RESUME SORTING AND FACIAL EMOTION RECOGNITION"

Submitted by

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GAGANA G R NAYAKA	**4AL16IS014**
MANOHAR GOWDA	**4AL16IS027**

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BACHELOR OF ENGINEERING

In

INFORMATION SCIENCE AND ENGINEERING

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ABSTRACT

After completing education, the next phase that comes in a person's life is job. However, there are lots of people who start working before completing their formal education. While looking for a job the most significant thing that speaks about a candidate is Curriculum Vitae (CV) or Resume. In this period of innovation, job searching has become progressively easier and simpler simultaneously.

Thera are a large number of applicants pouncing for a single position and hence it becomes extremely difficult for the employer to decide just dependent on their CV/Resume. To take care of this issue, there are organizations who give explicit configuration to their candidates with the goal that they can make this procedure somewhat simpler. The way toward choosing an applicant dependent on their CV/Resume has not been totally robotized. To solve this problem, an approach combined with Natural Language Processing (NLP) and Machine Learning (ML) seems like a feasible opportunity.

Research shows that, 90% of all CVs/ Resumes are checked for less than 2 minutes by the employers. This implies that, in most of the cases the employers only look at the bits of important parts or the points of interest in the CV/ Resumes and ignores the rest. The specific segmentation scheme of a general CV/ Resume makes it far easier to analyze and understand the necessary information. Therefore, the first objective was to segment the CV/ Resume into parts and then separate them in order to figure out the topics of each sentence through analyzing the keywords of each segment. After resume sorting of the curriculum vitae(cv) we go for the facial recognition of the candidates to analyze the situation of the candidates during interview by using machine learning algorithms. Facial expressions play a key job in analyzing and distinguishing emotions.