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GHARDA INSTITUTE OF TECHNOLOGY

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Department of Computer Engineering

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Major Project Gallery

Abstract Book of Major Projects by students of BE Computer guided by department faculties

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3	Manali Mahesh Purohit Pranita Santosh Waghare Gandhali Uday shetye	Prof. V. M. Nair	A user authentication protocol resistant to password stealing and password reuse attacks
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A user authentication protocol resistant to password stealing and password reuse attacks

The most popular form of user authentication is the text password, which is the most convenient and the simplest. Users mostly choose weak passwords and reuse the same password across different websites and thus, a domino effect. Also typing passwords into public computers(kiosks) suffers password thief threat, thereby the adversary can launch several password stealing attacks, such as phishing, keyloggers and malware. Therefore user's passwords tends to be stolen and compromised under different threats and vulnerabilities. The purpose of this system is to introduce the concept and methodology which helps organization and users to implement stronger password policies. Avoiding password reuse is a crucial issue in information systems which can at some extent contribute to password stealing issue also. In the proposed system, each participating website possesses a user's unique phone number, telecommunication services in registration and recovery phases and a long-term password used to generate one-time password for each login session on all websites. A user authentication protocol which benefits a user's cell-phone to prevent password stealing and password reuse attacks. System adopts the one-time password strategy in which users only needs to remember a long-term password to login on all websites which free users from typing password in untrusted browser. Protocol provides mutual authentication in secure way which prevents man-in-the-middle attack, phishing attack and pharming attack in an efficient way.

Automatic Intelligent Grading System for Subjective Answers

COVID-19 pandemic has presented a most wonderful gift to the world i.e., motivation for online education and learning. Online courses are getting popular among students and they are really promoting location independent knowledge. The examination and its evaluation are part of any learning system. Though online teaching is widely accepted by the educational environment, the examination process is not yet that much precise as far as pre-COVID exam stringency is concerned. Looking towards this limitation, we propose a system for automatic assessment of descriptive answers. An automatic answer checker application that checks the written answers and allot the marks with similar to traditional manual assessment. This type of tool/application/system has the challenge of having an abundant resource database, including questions, corresponding answers, and the marks allocation. Our proposed grading application uses natural language processing (NLP) and deep learning. We are extracting features to a model from a human evaluated sample dataset of answer scripts. For testing and validation, we have to provide input to the train model and we get output. After that we have to evaluate questions manually and then we have got that result. At the end we have to compare the result that we get from the model and result from manual evaluation. Our system is very useful in valuation of essays, descriptive answer scripts, document similarity checking, and plagiarism detection.

Yoga Fitness Suggester

Physical fitness is a general state of health and well-being and, more specifically, the ability to perform aspects of sports, occupations and daily activities. Physical fitness is generally achieved through proper nutrition, moderate-vigorous physical exercise, physical activity, and sufficient rest. Fitness is defined as being in good physical shape or being suitable for a specific task or purpose. An example of fitness is the status of your physical health. The condition of being fit; suitability, appropriateness, healthiness, etc. Regular exercise and physical activity promote strong muscles and bones. It improves respiratory, cardiovascular health, and overall health. Staying active can also help you maintain a healthy weight, reduce your risk for type 2 diabetes, heart disease, and reduce your risk for some cancers. Staying fit is not just a luxury but a necessity for all of us which leads us to a luxurious and happy life so, we decided to work on

Fitness-Sync

Real Time Sign Language to Text Converter

Sign language is one of the oldest and most natural forms of language for Communication, but since most people do not know sign language and interpreters are very difficult to come by, we have come up with a real time method for fingerspelling based on Sign Language. In our method, the hand is first passed through a filter and after the filter is applied the hand is passed through a classifier which predicts the class of the hand gestures. We created the Real Time Sign Language to Text Convertor which aims to eradicate the communication between them by developing a system in order to translate hand gestures into textual format without any requirement of a special sign language interpreter. For making Real Time Sign Language to Text Convertor we will include alphabets, words and sentences.

e-Examination Supervisor System

Online exams are getting popular among almost all colleges, school. Every year educational institutes conduct various examinations, which are mostly on online platforms. As we know now a day's due COVID-19 pandemic educational system is approaching online learning due to these exams which are conducted by institutes, schools, and universities are also on online platforms. Due to this When students apply to any online exams, this raises an issue of academic dishonesty. Students can cheat in online examinations held by their institutes. So to avoid this issue we are working on a project "E-exam supervisor system". This system can detect cheating if students cheat or violate their academic integrity policies. They catch cheats by using cameras, and IP monitoring. Hence our system will prevent cheating by detecting and this will be achieved through Online ID Authentication to prevent exam cheats, Secure Web Browsers that prevent cheating, Auto Proctoring to avoid cheating, Live Proctoring to prevent cheating.

Android Application for Disaster Management GIS map for North Ratnagiri

district

Disaster maps can be prepared to show the risk zones as well as disaster impact zones from a mitigation point of view, hazard maps can be created for various natural and manmade hazards such as floods, earthquakes, cyclones, forest fires etc. helps in understanding the risk of a location and planning accordingly for the same.
In this project we are going to make an android application for disaster management for Ratnagiri district. In which we are going to give live weather update through weather API. Also, we are highlighting certain risk areas using weather API. If we used this app it will be easy to provide help for risk zones people as early as possible. Basically, this project is used to mitigate the risk from disaster. Due to geographical location, natural disasters are a common incidence. The list of possible natural disasters includes earthquakes, floods, mudslides, typhoons, and volcanic eruptions. While the principles of preparedness are independent of location and scenario, the proponents thought it would be useful to have some information set in a context. In this project, our aim is to develop an android mobile application that will help the people for disaster preparedness. The target beneficiaries of this application are the people of Ratnagri. After all, we need the entire Ratnagirians to be prepared. This is true but we live in Ratnagiri and can't really speak about the needs of other cities. While much of the information here can be applied anywhere, the idea behind the site is to have as much local information as possible. It is a disaster mobile application that will raise awareness on what to do during emergencies like typhoons, floods, fire and earthquakes. It will also provide information on the telephone/mobile numbers to contact in case of emergencies and disasters. However, it's a good idea to have it in your mobile phone for when the unexpected disaster happens and so you can meet any emergency situation with confidence.

Facial Emotion Recognition and Object Detection (posture detection) For Soft Skill Enhancement

According to AISHE, in 2019, it has been seen that around 80% of Engineers are jobless and running a risk of not getting a job at all. To overcome this situation we have designed an AI-Based software that can enhance users technical-skill and soft-skill for campus interview preparation. Employers actively look for talents having not only specific hard skills but also various soft skills. To analyze the soft skill and technical skill demands on the job market, it is important to be able to detect soft skill and hard skill. Since 1980, the number of jobs with high social skills requirements has increased by

around 10% from the total India. Strong communication skills and technical skills are important in establishing personal and professional relations. There are two main types of communication: nonverbal and verbal. Most people know how to use verbal communication in daily life, but nonverbal communication is often unintentional and provides enough information about people. In this project, we have predicted the technical skills and soft skills of our user, why it is useful, how to understand it and how to improve your own communication style using AI.

Market Basket Analysis of Local Supermarket

Market Basket Analysis falls under the umbrella term of data mining. Market Basket Analysis is the process of mining meaningful correlations between different entities. Market Basket Analysis has been practiced by the retail / e-commerce sector for quite some time which helps them extract some unexpected trends. In the project, we have performed Market Basket Analysis on a transactional dataset obtained form Kaggle. This dataset belongs to Instacart, which is an online grocery shopping application. There are two objectives of this project: first is to obtain strong association rules and second is to perform Exploratory Data Analysis [EDA]. Comprehensive literature survey was conducted which led to finalizing the FP-Growth algorithm for data mining. At the end of the project, a total of 5 insights were uncovered at the end of EDA and a total of 75 strong association rules were mined with confidence level above 50%. All of the extracted important information is reported to stakeholders through a presentation.

Speech Emotion Recognition System

Emotion recognition is a rapidly growing research domain in recent years. Unlike humans, machines lack the abilities to perceive and show emotions. But human computer interaction can be improved by automated emotions recognition, thereby reducing the need of human intervention. Different persons have different emotions and altogether a different way to express it and that's why this project is divided into two main objectives, first is to recognize emotion from live voice and second is separation of multiple speakers and recognize emotions of separated speakers. In this project we have used Convolutional Neural Network(CNN) model.

Voice Assistant College (VAC) App

Voice assistant is a major growing feature that changes the way people can live. The voice assistant is commonly being used in smartphones and laptops. AI-based Voice assistants are the operating systems that can recognize human voice and respond via integrated voices. This voice assistant will gather the audio from the microphone and then convert that into text, later it is sent through GTTS (Google text to speech). The GTTS engine will convert text into an audio file in English language, then that audio is played using the play sound package of the python programming language. The main feature of our voice assistant will enable the ease of information desk in our college systems. VAC will also enable the ease of communication for the college official's at their desk. For example, if a newcomer is looking for faculty information and you're searching for a pile of data manually in your desktop, it will make the work hectic and confusing. Also it might lead to human errors. When a person asks VAC specific details related to a college, VAC will be able to answer the question related to the college details and will increase the ease of communication between the newcomer and the college, thus reducing the workload of answering general queries to the newcomers.

Data processing of industrial production cost sheet for data extraction and deliverable insights

There is a lot of scope for IT applications into any industry for various purposes. We were introduced to a problem from a chemical industry where there is no system to generate the cost sheets for the raw materials used in the production automatically. Traditionally the task is done manually with the use of MS-Excel. However, this method is not efficient. It takes more time and has more probability of committing errors. Our primary aim was to make this process more efficient and automated. Also, we intended to reduce the calculation errors to maximum extent. Finally, we were able to automate the process of reading the data and processing it further.

Auto Rickshaw Grocery Shopping

This project entitled, AUTO RICKSHAW GROCERY SHOPPING can be said as a little upgrade of the current online grocery shopping system where users can buy grocery products online which will further be delivered by the auto rickshaws. In the proposed system, there will be registered grocery stores as well as registered auto drivers who would deliver the said order from the nearby grocery stores and deliver it to the customer. Grocery Products will be displayed in an effective graphical user interface. This system will be like a virtual supermarket. User can select the product he wants to buy and the selected product will be added to cart. Cart contains the user's name, contact details, a product he had selected and the amount. Users can search for the product through categories like Fruits, Vegetables, etc. as per the choice of their stores or vendors. Location is one of the important aspects, the registered auto rickshaw driver in the nearby vicinity will be notified about the delivery based on their status, i.e. available or unavailable. If the auto driver is available to deliver the product they will be provided a unique token number for every different order. After the auto driver has picked up the delivery package from the vendor/shop, he will receive an OTP to keep a track of the order for the customer. After the driver delivers the order to the customer, the customer will receive an OTP which will be used by the driver to confirm and verify that the order has been delivered to the valid customer. There is no need for waiting in a long queue. No need of carrying heavy bags and struggling with trolleys. Customers can purchase products sitting at home by viewing images of different grocery products and adding in the shopping cart.

Handwritten Digit Recognition

Handwritten digit recognition is the ability of computers to recognize human handwritten digits. It is a hard task for the machine because handwritten digits are not perfect and can be made with many different flavors. The handwritten digit recognition is the solution to this problem which uses the image of a digit and recognizes the digit present in the image.

A computer performing handwriting recognition is said to be able to acquire and detect digits in paper documents, pictures, touch-screen devices and other sources and convert them into machine-encoded form. Its application is found in optical digit recognition, transcription of handwritten documents into digital documents and more advanced intelligent digits recognition systems. This project will help to recognize handwritten digits correctly. Also, it helps to improve accuracy of detection. In this digital world, everything including documents, notes are kept in digital form. The requirement of converting these digital documents into processed information is in demand. This process is called Handwritten digit recognition (HDR). The digital scan document is processed and classified to identify the hand written words into digital text so that it can be used to keep it in the documents format in computerized font so that everybody can read it properly. In this paper, it is discussed that classifiers like KNN, SVM, CNN are used for HDR.

These classifiers are trained with some predefined dataset and then used to process any digital scan document into computer document format. The scanned document is passed through four different stages for recognition where the image is pre-processed, segmented and then recognized by the classifier.

The MNIST dataset is used for training purposes. Complete CNN classifier is discussed in this paper. It is found that CNN is very accurate for HDR but still there is a scope to improve the performance in terms of accuracy,

Project Tracking & Information Collection System

The study was conducted to assess the methods and processes used by the collages in keeping the Student project records. The problems encountered by the students and instructors with regards to Security of the student project records from alteration or loss, submitting the advices or comment from the faculty, and the level of need for developing an Project tracking and information collecting system for college were determined. The Project tracking and information collecting system that is accurate, fast, and accessible for the teachers in college will facilitate the record ; it will also provide smooth operation and can help the office to be more efficient.This project has been develop to carry out the process easily and quickly.This project is develop using php language & Xampp server use for database connection.creating and managing databse of the project. As we know there is problem in our collage as there is lots of paper work for the teaching staff. They have to make a entry of every project and its details of the student studying last year in the registers or files .This is a PHP Project entitle Project tracking and information collecting system. This web application/system manages, stores, and retrieves the project records.The system has 5 types of users which are the Admin ,HOD,Project Coordinator,Student,Project Guide,. The Admin can

manage all the data in the system including the list of system users while the Student User has limited access to manage only. The faculty have authority to set the deadline .after the group is created the academic year of that group is displayed. The system can able to store the list of groups, students, and documents .Record management is a systematic approach for organizing, planning and tracking documents during the course of the project execution.This application will provide a platform for student to upload there documents ,presentations & for faculty to view the project document presentation for analysis and can provide there suggestions.with the help of this web application,the student interaction with faculty will be increased and project analysis also perform through power point presentation of student.

Web Application Penetration Testing

Our Project is Completely based on Vulnerability assessment and penetration testing on Web Application. This will give you a brief idea about how your website is vulnerable to various attacks. Doing penetration testing in a Control environment will help you to know the threats to websites and avoid any kind of attacks on it. Since GIT is on share server platform, so it will help you to avoid attacks like Cross Site Scripting,Clickjacking,SQL injection and many more.It will boneficial for our College website and make our College website more secure.