



Department of Information Technology

List of Projects Completed By B.Tech Students

Session: 2019-2020

CHATBOT BASED E-LEARNING SYSTEM

Guided By: Ms. Sayantani Saha

Abstract: The implication of Chatbots creates an interactive learning experience for the students, like the one to-one interaction with the teacher. From testing the student's behavior and in order to keep track of their improvements, bots play an essential role in enhancing the skills of an individual student. Chatbot aims to be an e-Tutor for students. It is equally relevant with a view to continuing education, that is, a training that accompanies the individual throughout life and is not limited to the first years of existence. A teaching-oriented platform, however, is really useful when it allows the student to take an active role in building his/her knowledge through dialogue, exchange and deepening tools (forums, chat, site links etc.). Therefore, We tried to make a chatbot System which will help students in their studies. In this project, a student can ask any selected topic related questions to the chatbot and the chatbot will give that answer if the answer of that question is present in the question-answer database. We also separately created an e-learning management system in which students can track their performance. To use our e-learning management system a student first needs to register in this system and after that he/she gets a sign in option. After signing in to the e-learning management system he/she can track his weekly, monthly, yearly performance. A multiple-choice question based quiz is implemented for kinesthetic learners, and there is a pedagogical Chatbot agent that assists users. It provides easy navigation and interaction within the content. The Chatbot is implemented to be a pedagogical agent for the users, which is meant for discussions and help with the topics.

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DEFACEMENT MONITOR AN ARTIFICIAL INTELLIGENCE BASED DEFACEMENT MONITOR

Guided By: Dr. Debasis Giri

Abstract: Websites have become a form of information distributors; usage of websites has seen a significant rise in the amount of information circulated on the Internet. Some businesses have created websites that display services the business renders or information about that particular product; businesses make use of the Internet to expand business opportunities or advertise the services they render on a global scale. This does not only apply to businesses, other entities such as celebrities, socialites, bloggers, and vloggers are using the

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Internet to expand personal or business opportunities too. These entities make use of websites that are hosted by a web host. The contents of the website are stored on a web server. However, not all websites undergo penetration testing which leads to them being vulnerable. Penetration testing is a costly exercise that most companies or website owners cannot afford. With web defacement still one of the most common attacks on websites, these attacks aim at altering the content of the web pages or to make the website inactive. This paper proposes a Web Defacement and Intrusion Monitoring Tool, that could be a possible solution to the rapid identification of altered or deleted web pages. The proposed tool will have web defacement detection capabilities that may be used for intrusion detection too. The proposed solution will also be used to regenerate the original content of a website after the website has been defaced.

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IMAGE ENCRYPTION USING GRAPHICAL TECHNIQUE

Guided By: Dr. Debasis Giri

Abstract: With the advancement in the field of communication technology, secure multimedia transmission has become an integral part of it. The strong correlations among the bits, pixels and blocks in a given arrangement of an image form the intelligible information. This perceivable information can be reduced by decreasing the correlation among these bits, pixels and blocks using certain techniques. This paper proposes a novel image encryption method based on changing the pixel positions as well as pixel values to confuse the relationship between the cipher- image and the plain-image. From the results, it is observed that the proposed technique significantly reduces the correlation among the pixels by shuffling the image matrix using a random vector. Moreover, the scheme has less computational complexity, good security and satisfies the property of confusion and diffusion. Image encryption plays an important role to ensure confidential transmission and storage of images over the internet. However, real-time image encryption faces a greater challenge due to the large amount of data involved. This paper presents a review on image encryption techniques of both full encryption and partial encryption schemes in spatial, frequency and hybrid domains

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SECURING APPOINTMENT DETAILS IN HEALTHCARE APPLICATION

Guided By: Sayantani Saha

Abstract: The current healthcare landscape desires efficiency and patient satisfaction for optimal performance. The outpatient of most clinics in developing countries are faced with a plethora of issues. These include: overtime for doctors and nurses during clinic sessions, long waiting time for patients, and peak workloads for counter personnel. The quality of health care delivery has been threatened by overtime and peak workload. Patient data is also a sensitive commodity which can be really harmful if leaked. This paper focuses on developing a system to create a secure way for patients to apply for doctor's appointments in a secure encrypted environment. In this paper, a patient appointment system is designed using HTML, CSS for the frontend. PHP for handling client-server requests and MYSQL and Wamp-server for the backend.

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DESIGN AND ANALYSIS OF AUTHENTICATION PROTOCOL IN E-VOTING SYSTEM

Guided By: Dr. Debasis Giri

Abstract: Nowadays the Authentication Protocol for any online system is questionable. In this paper we design an e-voting protocol which should be independent. We briefly discuss security requirements for e-voting schemes focusing on our proposed scheme. We design a receipt-free e voting protocol which requires neither anonymous channel nor other physical assumptions. We give a short survey on formal analysis of e voting protocols. Using the applied pi-calculus we model and analyse some security properties of the proposed scheme.

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AIR POLLUTION PREDICTION USING MACHINE LEARNING

Guided By: Dr. Somdatta Chakravortty

Abstract: Making a future prediction of air pollutants based on the past pollutant record of MAKAUT, Haringhata area. One of the most important emerging environmental issues in Asian cities is air pollution. Air pollution is an atmospheric condition in which the concentration and duration of certain substances present in the air produce injurious and destructive effects on both man and the surrounding environment. The most common pollutants in air are sulfur oxide, nitrogen dioxide, carbon monoxide and dioxide, and particulate matter

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ATTRIBUTE BASED ENCRYPTION in HEALTH CARE APPLICATION

Guided By: Mrs. Sayantani saha

Abstract: This project is entitled as “Attribute based encryption for health care application” . In this project, we aim to make Attribute Based Encryption more suitable for access control to data stored in the cloud. For this purpose, we concentrate on giving the encrypted full control over the access rights, providing feasible key management even in case of multiple independent authorities, and enabling viable user revocation, which is essential in practice. Recent trends show a shift from using companies’ own data centers to outsourcing data storage to service providers. Besides cost savings, flexibility is the main driving force for outsourcing data storage; although on the other hand it raises the issue of security, which leads us to the necessity of encryption. Traditional cryptosystems were designed to confidentially encode data to a target recipient and this seems to restrict the range of opportunities and flexibility offered by the environment.

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PREDICTION OF HUMAN DEVELOPMENT INDEX USING MACHINE LEARNING AND REMOTE SENSING DATA

Guided By: Dr. Somdatta Chakravortty

Abstract: Improving human well-being is progressively perceived as basic for development towards an economical and alluring future. The absence of reliable poverty data in developing nations represents a major challenge for settling on educated strategy choices and dispensing assets successfully in those territories of the world. However, one good indicator of vegetation and built-up features is satellite imagery (NDVI, NDBI, NDWI). Information received from daytime satellite imagery[1] has created different internationally reliable intermediary proportions of human prosperity at the gridded, sub-national, and national dimension. Satellite images are progressively utilized by social researchers as an intermediary for economic activity or financial advancement in subnational areas of developing nations where disaggregated information from statistics workplaces are not accessible. We survey a few manners by which satellite imagery has been utilized to gauge the human well-being inside countries (HDI as a whole). We fine-tune a Deep Neural Network and then test the classifier's performance in predicting values of HDI for the upcoming years.

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