

Paper ID NS#10

SIDE CHANNEL ATTACKS

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The authors use the principles of timing attacks to demonstrate the vulnerability of certain algorithms. The algorithms are RSA and Diffie Hellman. The private keys are extracted in each algorithm by analyzing the time differences in various cases by varying certain characteristics of the private key. The authors have been successful in identifying key points of differences helpful in decoding the private keys. The authors also attempt to carry out a timing attack on the Elliptical Curve Cryptography algorithm.

Paper ID AI#45

NETWORK TRAFFIC CLASSIFICATION USING DEEP LEARNING

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The identification and classification of network applications through observation of associated packet traffics is vital to the areas of network management, trend analysis, adaptive network-based Quality of Service (QoS) marking of traffic and lawful interception of which there is a growing need for accurate and timely identification. We propose a new composite deep learning model to perform network traffic classification with automated feature extraction and feature selection processes. Our model is a composition of two different deep learning models based on neural networks namely Convolution Neural Network (CNN) and Recurrent Neural Network (RNN). The CNN module provides a strong leverage for pattern recognition thus performing effective spatial component analysis of the network packets. The RNN component is used to perform temporal component analysis as RNNs are designed to perform effectively on sequential data values. For evaluating the performance of our model, we perform validation and testing with our dataset using the standard precision and recall

metrics - precision is the fraction of relevant instances among the retrieved instances, while recall is the fraction of relevant instances that have been retrieved over the total amount of relevant instances. Thus, a combination of CNN and RNN would allow us to exploit both spatial and temporal features of the network, allowing us to perform the classification with a much higher efficiency than classically used approaches.

Paper ID DM#07

PREDICTION OF HEART DISEASE USING DATA MINING

TECHNIQUES IN INDIAN CONTEXT

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In recent times the number of people having heart diseases is on the rise. This is mainly due to a lot of factors related to one's lifestyle, eating habits and race. Healthcare data needs to be analysed with sophisticated techniques to give useful insights to identify and predict various diseases. This work focuses on predicting the probability of a person getting heart disease using parameters like age, family history, total cholesterol, S triglycerides, Fasting blood sugar and race. Generally Asian people get heart diseases at lower age and at lower extra weight than their Caucasian counterparts. This study will compare different algorithms like SVM, Naive Bayes and Artificial Neural networks on our dataset. The accuracy of prediction is of utmost importance in this study as predicting whether a person will get heart disease or not is very crucial.

Paper ID NS#11

NETWORK INTRUSION DETECTION SYSTEM USING

MACHINE LEARNING APPROACH

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Internet has connected the world globally. In these Internet environment there are many risks of Network attacks. With the information density and global reach, the risk of integrity and confidentiality has also increased. Breaching the security system has become so easy. So, the network security enhancement is brought into limelight these days. Network security is act of protecting and preventing unauthorised interruption in any kind of network. It involves network intrusion detection tools which monitors the network. NIDS is placed at some strategic point in the network to monitor tra_c from source to destination devices within the network. Ideally the system would scan all inbound and outbound tra_c, however this might create a bottleneck that would hinder the overall speed of the system. Lastly, these tools are equipped with Machine learning algorithms so that the system becomes more responsive and gives accurate results. Intrusion activities leave evidence in audit data, therefore the pattern of the normal and malicious activities can be learnt and distinguished with the help of Machine learning algorithms.

Paper ID AI#50

DESIGN AND IMPLEMENTATION OF LIBRARY SHELF
MANAGEMENT SYSTEM USING MACHINE LEARNING
AND INTERNET OF THINGS

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The biggest work load on any librarian is of picking up the books o_ the reading desk and placing them back in place where they belong. The major issue is targeted and a solution to this is proposed. A real life bot is going to do this task of solving the problem and is going to help the librarian reduce their work. Technologies like Machine Learning, Internet of Things, Computer Vision, Arti_cial Intelligence lets us achieve this goal. The bot is going

to be powered with all of the above mentioned technologies and the goal is going to be achieved. These technologies in association to the hardware is going to help achieve the goal. The bots process cycle from finding to placing the book is divided into four parts each having an important role which uses a new set of technologies in order to achieve its own goal. The bot first finds the book. Computer Vision is the main technology that is going to help achieve this. After the book is found, the bot will be responsible in picking it. Internet of things is the major part of this module as it employs multiple bots in picking up the books and synchronizing their working. The next step is to travel to the destination shelf where artificial intelligence plays an important role in deciding the path to be chosen for optimality. Finally placing the book in the shelf, where Machine Learning is going to be used for the bot to recognize the existing pattern and place the books successfully. In addition to this the bot is also going to help one fetch the desired book. Since there is a centralized server

Paper ID AI#04

SECURE AUTHENTICATION MECHANISM IN AUTOMATED TOLL SYSTEM

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Vehicles queuing up to pay toll tax at a highway toll gate is a common sight. The toll collection system mostly works on a manual process and can take up to a minute to process each vehicles transaction. Time, efficiency and security of identity of user are a matter of priority of present day. Authentication, Authorization and Accounting of each user are important functions to provide secure system. To solve this problem, I present to you a Secure authentication mechanism in Automated Toll System. This system can greatly expedite the time taken by each vehicle to pay the toll tax and also improves Authentication mechanism. Secure authentication mechanism in Automated Toll System is an automatic system which leverages the Internet of Things technology to identify a vehicle via a unique identification tag. We have used RFID tag in this case. Our protocol is based on a zero-knowledge approach, and it is protected against common attacks.

Paper ID NS#12

SECURE KEY MANAGEMENT

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Low Power and Lossy Networks (LLNs) are a class of networks in which both the nodes and their interconnection are constrained. LLN nodes typically operate with constraints on processing power, memory, and energy (battery power). Their interconnections are characterized by high loss rates, and instability. LLNs are comprised of anything from a few dozen to thousands of nodes. Considering the resource constraints of IoT devices, we have proposed a Key Management Algorithm. For Key Management we are using Elliptic Curve Cryptography (ECC) with digital signature algorithm to further enhance the security of network.

Paper ID NS#14

DATA INTEGRITY ASSESSMENT IN E-HEALTH CARE SYSTEM

USING HASHING MECHANISM

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Wireless Sensor Network technology has its potential usage in wide range of applications. Healthcare applications are considered as promising _elds for wireless sensor networks, where patients can be monitored using wireless medical sensor networks (WMSNs) [1]. Deployment of WMSNs for healthcare monitoring minimizes the need for healthcare professionals and helps the patients and elderly people to survive an easy independent life. However, deploying new technologies in healthcare applications without considering data integrity makes patient

security vulnerable. Any intruder can send malicious or modified data to the unsuspecting sink, which will be accepted without any checks. Data integrity is the driving force in E-Health care Systems and is an essential aspect of service delivery at all levels. The integrity of collected and transmitted data from medical sensor is critical, whether inside the network, or when stored at central servers. This paper discusses data integrity in the WSNs (Wireless Sensor Networks) for real-time patient monitoring using hashing mechanism. Our aim is to instigate discussion on these critical issues since the success of healthcare application depends directly on patient security.

Paper ID DM#08

SMART EXPENSE MANAGEMENT SYSTEM

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Smart home technology is the near future necessity that aims to provide comfort and security with a minimal cost by avoiding wasteful expenditure. In this model, we have focused on the efficient expense management by monitoring its timing and quantum of cash outflow. Our proposed model helps in recording and keeping track of all types of expenses incurred by the household owner. The recorded expenses are categorized to provide an insightful distribution of the total spending thereby increasing the efficiency and effectiveness in the task of maintaining household budget. The proposed model will not only help the users manage their expenses but also help the marketing executives to plan marketing according to the user needs. The proposed model is not only extensible but can be included with other different technologies for further refinement of the model and progress towards achieving user personalized technology.

Paper ID AI#42

PROGRESSIVE GENERATIVE ADVERSARIAL BINARY

NETWORKS FOR MUSIC GENERATION

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Progressively training a GAN for music generation drastically improves the quality of outputs generated and also stabilizes the training of the neural network. This process involves adding new layers into the neural network after the previous ones have converged, this process substantially reduces the training time and adds to the stability of the model. Thus we employ this training methodology to train the model progressively in the pitch and time domain i.e. starting from a small value of time and pitch range we successively expand the matrix sizes till the end result is the completely trained model giving out outputs of tensor sizes [4 (bar) x 96 (time step) x 84 (pitch range) x 8 (tracks)]. We make use of deterministic binary neurons as they help in improving the results. Hence we append a layer of deterministic binary neurons at the end of the generator to get binary valued outputs rather than fractional values that range from 0 to 1.

Paper ID NS#16

ROBUST INTRUSION DETECTION SYSTEM AGAINST
ADVERSARIAL CONTAMINATION USING DEEP
AUTOENCODER

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The existing state-of-the-art in the _eld of intrusion detection systems (IDSs) generally involves some use of machine learning algorithms. However, the computer security community is growing increasingly aware that a sophisticated adversary could target the learning module of these IDSs in order to circumvent future detections. Consequently, going forward, robustness of machine-learning based IDSs against adversarial manipulation (i.e., poisoning) will be the key factor for the overall success of these systems in the real world. In our work, we focus on adaptive IDSs that use anomaly- based detection to identify malicious activities in an information system. To be able to evaluate the susceptibility of these IDSs to deliberate adversarial poisoning, we are willing to develop a novel framework for their performance

testing under adversarial contamination. We are specifically making use of novel loss called as mean false error (MFE) and means square false error (MSFE) in deep learning to work with imbalance datasets. We will also study the viability of using deep autoencoders in the detection of anomalies in adaptive IDSs, as well as their overall robustness against adversarial poisoning. We will try to demonstrate the proposed method which has superiority over the conventional methods for classifying imbalanced datasets. The scope of the project is to detect and prevent intrusion. The objective of the system is to detect the malicious data and improving the efficiency and accuracy of benign data

Paper ID AI#54

STUDENT PERFORMANCE ANALYSIS

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Students taking online courses i.e. distant online courses many a times face several issues.

Many times professors are unable to guide the progress of the student while he/she is taking a

course. This project aims in giving a concluded view of students performance in these distant

programs by taking in view the tests provided by the instructor. This information can be

used to early identify students at-risk based on which a system can suggest the instructors to

provide special attention to those students who are weak in a particular module or subject.

This information can also help in predicting the students grades in different courses to

monitor their performance in a better way that can help instructors to identify if their teaching methods are helping the students or not.

Paper ID AI#05

POSE ESTIMATION AND ACTION RECOGNITION USING MULTI

-TASK DEEP LEARNING

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Action recognition and human pose estimation are closely related but both problems are

generally handled as distinct tasks in the literature. In this work, we propose a multitask framework for jointly 2D and 3D pose estimation from still images and human action recognition from video sequences. We show that a single architecture can be used to solve the two problems in an efficient way and still achieves state-of-the-art results. Additionally, we demonstrate that optimization from end to end leads to significantly higher accuracy than separated learning. The proposed architecture can be trained with data from different categories simultaneously in a seamless way.

Paper ID AI#28

AUTOMATED QUESTION GENERATION AND ANSWER
VERIFICATION USING VISUAL DATA

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In this project, we introduce the task of automating the process of question generation as an extension to existing Visual Question Answering (VQA) systems. It eliminates the need for human intervention in dataset annotation and also finds applications in various offline and online academic courses, where test questions need to be written by human authors. Such question formulation tasks take significant effort and time. To simplify this effort, we could use an Automatic Question Generation system that focuses on questions that can be generated in English from data retrieved from images. There have been multiple datasets that attempt to have a series of question and answer pairs for an image. Through our approach, we not only generate question, but evaluate the questions generated by using a question answering system. Through our approach, we can generate question-answer pairs as well as improve the performance of VQA models. Using our system, we aim to ignite the learning process for young children, through an interactive interface. Another application is for the visually impaired people wherein detailed question answering can help them understand any given image in a better way.

Paper ID DM#13

TRAJECTORY ENRICHMENT FOR INCREMENTAL LOCATION

PREDICTION

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Data mining is the process of sorting through large data sets to identify patterns from the existing data and establish relationships to solve problems through data analysis. Existing location prediction systems use historical data to identify patterns in the users visited locations and use this data to predict the users next location without taking any other parameters into account. The proposed system aims to enrich raw trajectories to extract more information about the location where the user performs some activity, that is, to improve the accuracy of detecting significant places and analysing the mobility pattern for the particular user. The system will use information such as the transportation mode, direction, speed, time etc. to enrich the trajectory data and to identify mobility patterns. Frequent updating of mobility data is required to successfully predict the next location in the users trajectory. We propose to do this using an incremental approach. The final model will be able to predict a sequence of possible next locations. The system thus finds its application in the field of Marketing, Advertisement, Traffic Management, Emergency and Destination prediction.

Paper ID AI#36

3D LAYOUT GENERATION OF A ROOM FROM 2D IMAGES

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As humans, our understanding is greatly improved when we see things in 3D instead of 2D. Our goal in this project is to reconstruct the 3D model of indoor scenes based on 2D images. One of the most important features of this project is that it uses only a single 2D image. Most methodologies today use two or more images. This is done for multiple reasons, one of

them being the difficulty to contain an entire room in a single image. To solve this problem, we propose an approach that uses panorama images. They give a 360 horizontal view of the room and a 180 vertical view of the room. Hence, such images can cover the entire room in a single image and translate contextual information to our model. While there are many solutions for outdoor scenes, 3D reconstruction of indoor scenes is now emerging. Indoor scenes have various problems like complete or partial occlusion and the presence of clutter in the room. Indoor scene reconstruction is yet to be fully exploited. Using a single image reduces computational efforts while making the user interface more efficient and easy to use. It also reduces the complexities that come with 2 or more images. Our model aims at reconstructing 3D models of more generalized rooms which can later be expanded to more visually complex settings. (Parorama images, 3D reconstruction, encoder, decoder)

Paper ID AI#01

DETERMINATION OF IMAGE SPECIFICITY

Sarmishta

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The problem of Image Specificity is multidisciplinary. Usage of classical datasets like Google's Billion Words and Microsoft COCO (Common Objects in Context), for newer problems like Visual Question Answering, Visual Grounding of Natural Language Captions, etc. can often yield poor results. The reason for this can be attributed to a lack of specificity in samples. In fact, it has been shown that the average correlation between human written captions of images is only 0.7. In this project, we use diverse caption generation to determine image specificity. We use Diverse Beam Search to enforce diversity and produce semantically distinct captions for sample images. The diverse captions generated in this way, are compared using the GPT model. Thus, highly specific images would have very similar captions, while non-specific images would have highly diverse captions. Using this information, samples in a dataset can

be transformed with a calculated weight vector to give preference to the results from images with higher specificity. We implement baselines for Visual Grounding and Text-Based Image Retrieval and compare performance on the original and weighted datasets to highlight the improved results obtained by weighting datasets by specificity.

Paper ID HCI#14

DRISE (DIABETIC RETINOPATHY IDENTIFICATION AND SEVERITY EVALUATION)

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Diabetic Retinopathy (DR) is an ocular disorder caused due to after effects of post-stage diabetes mellitus that affects the retina. If unchecked at initial stages, it can lead to permanent blindness; the progression to visual impairment can be excruciatingly painful. DRISE is an intelligent system that will take colour fundus photographs of the patients retina as input, put it through multiple layers of a neural network and will give a definitive prognosis for Diabetic Retinopathy (DR). Obtained results will be further segregated into predefined stages of severity viz No Diabetic Retinopathy, Nonproliferative Mild Diabetic Retinopathy, Non-Proliferative Moderate Diabetic Retinopathy, Nonproliferative Severe Diabetic Retinopathy, Proliferative Diabetic Retinopathy. This classification will serve as a conclusive indicator of the severity of the condition and thus enable the patients to take appropriate measures immediately.

Paper ID AI#29

MAXIMIZATION OF TAXI REVENUE USING REINFORCEMENT LEARNING

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Local taxis are of prime importance in urban cities like Mumbai, as it is infeasible for trains and buses to get to every corner of the city and fulfil the requirements of the rapidly growing population. Due to this, it is important to have an efficient taxi system. In order to have an efficient taxi system, it is necessary to aid the drivers with innovative tools and help them compete with ride taxi services such as OLA and Uber. This will not only increase the revenue of the taxi drivers but also reduce their cruising time to provide quicker service to the passengers. Our aim is to guide the taxi drivers to appropriate locations in order to find the highest paying ride. To do so, we have analysed the historical trip data for various trips. We have used Reinforcement Learning to create a simulation of various trips based on historical data and ascertained the location a driver should go to, depending on the time of the day, to get optimized revenue for the whole day. Since the model takes weather condition and traffic into account, it proposes the quickest route and hence reduces fuel wastage. The main objective of our project is to increase the revenue of taxi drivers and provide better service to passengers.

Paper ID AI#37

AI JUDGE: AN INTELLIGENT JUSTICE SYSTEM

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INDIA The 2nd most populated country in the world has one of the worst Judicial infrastructures. We live in a time when the Ex. Chief Justice of India accepted on National television the problems with our judicial system. Our courts are crowded, overworked and ultimately there are dates without outcomes. The Indian citizens lose faith in our justice system when they must wait years usually until death till their names are cleared of the stain that has been brought upon it. Our system can be used to unclog our justice system because

it is a machine that can work day and night, reduce the associated delays, red-tapism and corruption by just taking the lower court judgement as input. This system then a_irms or reverses the cases using ML and NLP techniques, thus reducing the unnecessary pressures on our judicial system and helping the people in their _ght for justice. A famous proverb says that: Justice delayed is justice denied.

Paper ID AI#03

INSPIROBOT

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Anyone can fall prey to depression, anxiety and many other mental disorders. Also, many are becoming targets of loneliness and isolation. Thus, we have researched on mental illness and its consequences and came to root cause and that is misery and hopelessness. To curb such inferior feelings, we implement a bot powered by Arti_cial Intelligence. The bot understands through text provides with suitable responses. It talks with the user as a guardian/helper provides with conversation and motivational quotes and constantly lifting his mood. The bot also provides with graph based on mood change and with insights to patterns in behavior. The bot also helps user to recover from downsides and also teach him about Cognitive Behavioral Therapy. Unlike medical supervisor cannot be with you all the time, but the bot can stick to user anytime it needs him. Thus, the bot is not an alternative to medical supervisor or a doctor but as an additional measure with whom user can constantly interact. The implementation ties to breach gaps what medical supervision cannot constantly provide. We are using SVM intent classi_cation to understand users intent and then use a dialogue engine to provide responses to each of its intent. Dialogue engine helps to handle useful conversation with user and also motivate him.

Paper ID AI#12

MODIFIED ATTENTION GENERATIVE ADVERSIAL NETWORK

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This paper attempts to explain a technique for generating fake, but realistic images from the text that is input. This technique is combination of deep attention multimodal similarity model (DAMSM) Attentional Generative Adversarial Network (AttnGAN). It is attention-driven, thus allows generating specific details at different sub-regions of an image, by paying attention to relevant words in the natural language description.

Paper ID AI#53

MATHEMATICAL EQUATIONS COMPUTATION USING VISUAL
INPUT

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Mathematics is an integral part of the education system. There are many aspects of mathematics which are complex and dreaded by students because of the complexity of solving those problems and equations. There are many online tools available that help students solve these equations to help them understand the concepts and aid them for future problem solving. But inputting the equations to these online tools and websites can become very tedious in case of big, complex problems. Thus we aim to develop a tool that will aid the students in this matter. The students can simply draw the entire problem in air and our system will recognize the numbers and operations based on the gesture and provide the answer. The aim is to ease the process of inputting the mathematical problems to the problem solving tools. A histogram based approach is used to separate out a specific color input from the background image. Background cancellation techniques are used to obtain optimum results. Finally, a gesture object is created from the recognized pattern which is compared to a defined gesture dictionary. Thereafter the entire equation is built and then processed to give the answer as the output.

Paper ID AI#48

EXOPLANET SEARCH

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NASAs Kepler Mission is a special-purpose spacecraft that monitors the light variations in stars with the goal of looking for planetary transits. When a planet passes in front of its host star there is a small drop in the light from that star; this occurrence is known as a transit and this method of noting constantly periodic transits and their duration is employed on a large scale to discover and con_firm the existence of exoplanets. Over its lifetime of four years, Kepler has created approximately 14 billion data points. The objective of this paper is to look for exoplanets within this publically available dataset by proposing a new machine learning model for this process which combines representational learning and feature engineering.

Paper ID C#02

NUMC++ - A FRAMEWORK FOR OPERATIONS ON NDARRAYS

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Mathematical concepts and computational problems are motivated by applications in computer science. The same applies to linear algebra operations. Multi-dimensional arrays are ubiquitous in our daily lives as they are instrumental in the e_ficient manipulation and storage of digital data. [1] In this project we propose to build NumC++ - a Linear Algebra Framework in C++ to support n-dimensional arrays. It is concerned with the manipulation and arithmetic of arbitrary sized arrays. It can work with primitive and user de_fined data types. The objective is to create a container for an n-dimensional array, enable assignment

individually or slice-wise, implement slicing, and manual broadcasting. Additionally, support for basic arithmetic operations with arrays (implicit broadcasting) is desired.

Paper ID HCI#15

ARDECOR -AUGMENTED REALITY INDOOR DECORATION SYSTEM

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Augmented reality overlays computer-generated video onto camera-captured video in such a way that the CGI objects appear to have an absolute location in the real world. Rather than imagine how an object will look in a space, shoppers can display it in real time. Its the sort of thing that only augmented reality can let you do, and something that few furniture retailers would have the clout to attempt and thus will provide them with a competitive edge and also result in fewer returns of products and help them in customer acquisition.

Paper ID HCI#13

SPEECH-TO-ISL (INDIAN SIGN LANGUAGE) TRANSLATION SYSTEM

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Indian Sign Language (ISL) is the predominant language used for communication by the deaf and dumb population in the Indian subcontinent. It employs signs consisting of hand gestures, facial expressions or body postures to convey the desired message and emotion. It is a full-edged natural language with its own grammar and lexicon. To reduce the communication gap between the deaf and dumb community and the normal population,

there is a need for translation systems. Through this project, we propose an end-to-end translation system to convert English speech to ISL. We intend to develop a framework for a human computer interface that is capable of recognizing and interpreting spoken language and then act out the corresponding ISL gestures to facilitate a very convenient, real time form of communication between the di_erently-abled community and the normal population.

Paper ID HCI#15

ARDECOR -AUGMENTED REALITY INDOOR DECORATION
SYSTEM

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Paper ID DM#10

IDENTIFYING PEOPLE INVOLVEMENT IN LEGAL CASES
USING ARTIFICIAL INTELLIGENCE

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All Indian court cases (1950 onwards) are available on the courts website in the form of

pdfs. A layman would find it very difficult to understand these legal documents without the presence of an experienced lawyer. For students and other lawyers who use past cases as a reference tool would not be able to get the gist of the case easily. The need for summarization becomes evident, but the output of already existing summarizers does not define how each person was involved in the case. Involvement in a case can be one of six types: accused and guilty, accused but proven innocent, witness, a fake witness, victim, and a fake victim. This project uses Natural Language Processing to extract information, understand sentiments, and create a person-specific summary which will help classify a person's involvement in a particular case.

Paper ID AI#38

MASTERING ATARI GAMES USING REINFORCEMENT LEARNING

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Reinforcement learning (RL) is an area of machine learning, concerned with how software agent sought to take actions in an environment so as to maximize some notion of cumulative reward. It allows machines and software agents to automatically determine the ideal behaviour within a specific context, in order to maximize its performance. The problem, due to its generality, is studied in many other disciplines, such as game theory, control theory, statistics and genetic algorithms. In game theory, RL is used to determine what must be the next move for the agent. An agent is supposed to decide the best action to select based on his current state. When this step is repeated, the problem is known as a Markov Decision Process (MDP). It provides a mathematical framework for modeling decision making in situations where outcomes are partly random and partly under the control of a decision maker. RL requires clever exploration mechanisms. Randomly selecting actions, without reference to an estimated probability distribution, shows poor performance. Problem arises when every MDP is not sufficient to express all the aspects of the state of the environment bringing in uncertainty. This also make the number of possible states extremely large and

uncontainable by modern computers and hence unsolvable by dynamic programming. Hence here comes in Machine learning and the Bellman's Equation which are used to approximate the solutions to MDPs. Since the agent in the environment can perform some actions leading to different states from the current state, we need an optimal policy to get the best reward from the current state. This problem of getting the optimal policy can be solved by using Q-learning technique that uses value iteration to get the optimal policy. Q learning basically gives the Quality of each action state pair taking into account the future reward. But due to the complexity of the environment the number of states are very large leading to the recursive relation being computationally infeasible, hence there is an need to approximate the Q function. The Q-value function can be approximated by using an neural network. This method is called deep-Q learning.

Paper ID AI#06

ANSWERING QUESTIONS IN NATURAL LANGUAGE ABOUT
IMAGES USING DEEP LEARNING

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Visual question answering (or VQA) is a new and exciting problem that lies at the intersection of natural language processing, knowledge reasoning and representation; and computer vision techniques. Given an image and a natural language question about the image, the task is to provide an accurate natural language answer. The task typically involves showing an image to a computer and asking a question about that image which the computer must answer. The answer could be in any of the following forms: a word, a phrase, a yes/no answer, choosing out of several possible answers, or a _ll in the blank answer. We explore the various approaches used by global teams to deal with this problem and the speci_cations of the publically available dataset in order to analyze the feasibility and scope of this domain. This technology _nds its use in helping blind people in object recognition using voice commands. It may also be used by physicians and medical practitioners to con_rm or validate their diagnosis about medical imagery. Since this _eld is relatively new the possibilities are endless when it comes to datasets, algorithms and accuracy achieved. We aim at understanding this expanse of

possibilities at hand and develop conclusive ideas about its further growth.