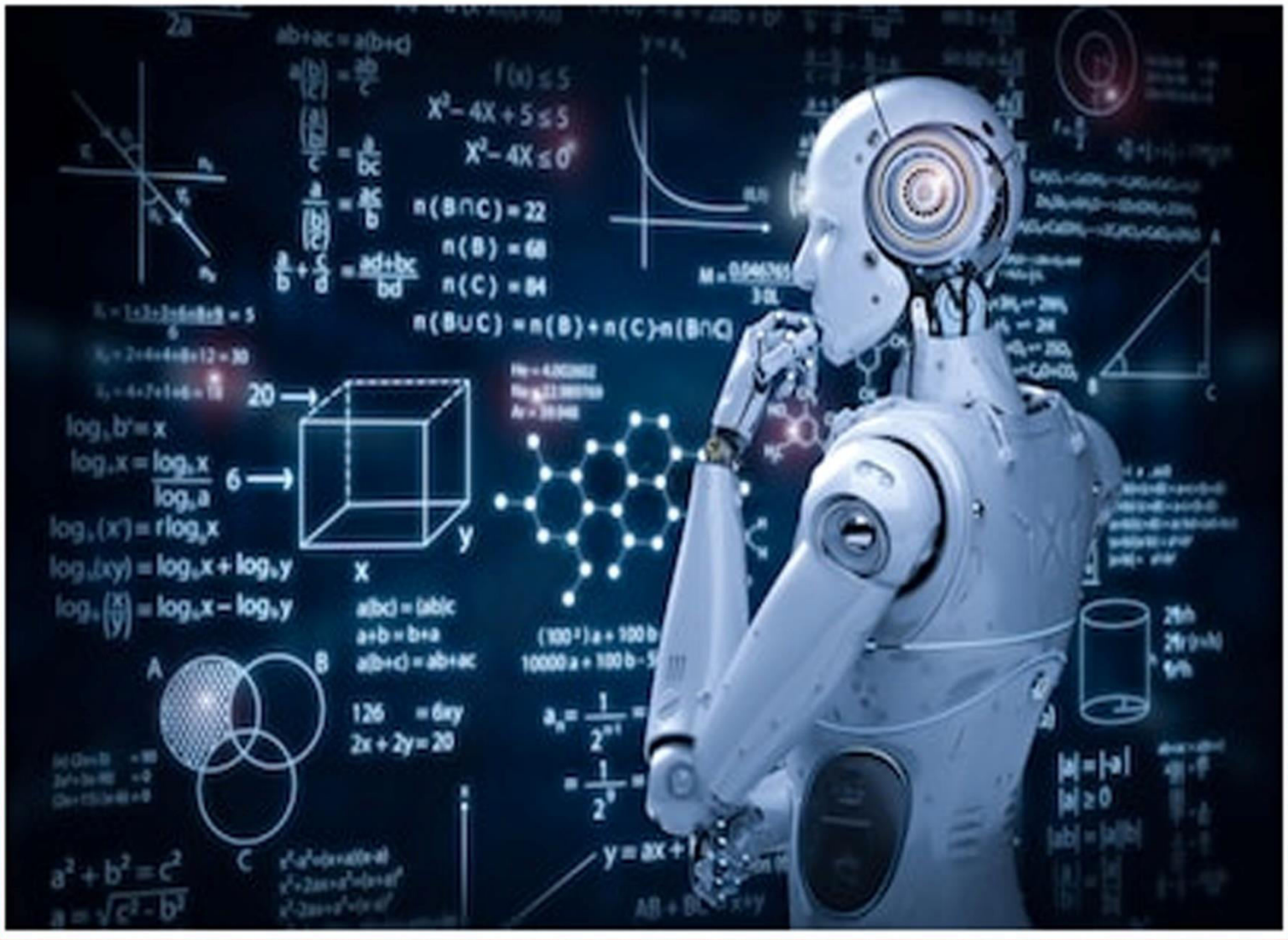
DEPARTMENT OF COMPUTER SCIENCE ENGINEERING



TECH PULSE

2018-19

PRAGATI ENGINEERING COLLEGE

1-378, ADB Road, Surampalem-533437

(Approved by AICTE, Permanently Affiliated to JNTUK, KAKINADA & Accredited by NAAC with 'A' Grade)

Recognized by UGC under sections 2(f) & 12(b) of the UGC Act, 1956)

TECH PULSE

Vision:

To emerge as a center of technical expertise in the field of computer science and engineering by producing globally competent professionals with technical & research capabilities, ethical values and team spirit.

Mission:

M1. To produce qualified and competent software professionals.

M2. To induce application oriented and research capabilities in students for the betterment of society.

M3. To inculcate ethics and human values in students so as to adapt to the dynamism in the field of computing technology.

Program Educational Objectives:

- **PEO-1**

  To provide students with a strong foundation in the mathematical,

  scientific and engineering fundamentals necessary to formulate, solve and analyze engineering problems.

- **PEO-2**

  To develop an ability to analyze, design and develop novel engineering solutions.

- **PEO-3**

  To make the students responsible with ethics, best practices, values and social concerns to meet equirements of responsible team player in the society.

CONTENTS

Message From Head Of The Department

Our department is fully committed to provide students with a strong, broad based fundamental engineering education and prepare the students for a career in the industry, teaching and nationwide laboratories. We also plan to develop entrepreneurial skills in students so that they would propel the spirit of growth of our economy and would be able to generate employment opportunities for other qualified and skilled persons. I personally look forward to integrate my experience of over 10 years in teaching and research into the learning systems and use my skill along with the collective efforts of the other faculty members of the department to build a comprehensive methodology that helps us to nurture the young minds. I look forward for prepare the students to face the challenges of technology that the engineering sector would offer in the future and guide them in offering technological solutions for the betterment of the society and our nation.

Wishing all our students brilliant and bright future.

With Best Wishes,

Dr. M Radhika Mani
Professor & HoD of CSE,
Pragati Engineering College
Mail: cse_hod@pragati.ac.in

“If you think technology can solve your security problems, then you don’t understand the problems and you don’t understand the technology.”

— Bruce Schneier

Deva Kumar Kilim
(17A31A0545)

Automated Bell System

Generally, most of the bell systems in the places like educational institutions, industries etc. are manually operated. Sometimes ringing the bell may be delayed or rang early. The Automated Bell System is developed to operate the bell automatically without manual operation.

A 5v relay is used in combination with a microcontroller to automate the operation of the bell. A web application is developed using ReactJS library. The user is flexible to change the current schedule and to add or remove holidays using the web application provided, so that the system does not operate on the holidays. The schedule timings, holidays and other configurations are stored in MongoDB; and the communication between the microcontroller and the web application is managed by a Python API developed using flask.

Sri Harsha Sanampudi

(17A31A0551)

Arduino based Home Automation

Surya Teja Chada

(17A31A0534)

In this modern cut throat world everyone is busy in their own professional issues and societal issues. So, chances are there that we might be at somewhere far away from our home but controlling things at our home might be quite necessary. This is the scenario where HOME AUTOMATION comes in to picture. In this regard, home automation is not just confined to one particular thing. Any

Participated in TECHNO-FAIR, in Jawaharlal Nehru Technological University Kakinada(JNTUK) and presented a prototype of SMART HOME.

P Vamsi Janakiram

(17A31B0553)

K K K Prasanthi

(17A31B0514)

system that we possess in our home that makes our life much easier comes under this Zonour.

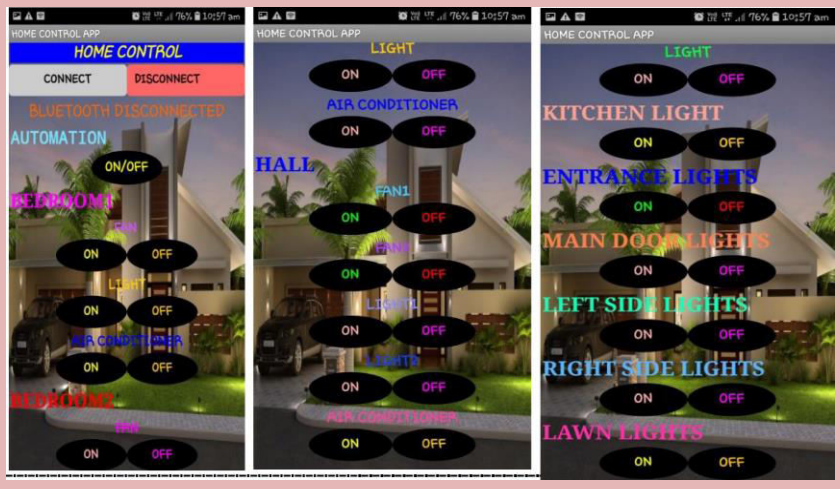
Hardware components used for the setup :

- ❖ IR sensor(Infrared sensor)
- ❖ Photoresistive sensor
- ❖ LPG Gas sensor
- ❖ Arduino Uno
- ❖ Relay board
- ❖ Tungsten bulb
- ❖ Connecting wires
- ❖ AC power supply(230v)
- ❖ Bluetooth-HC05

Software requirement:

- ❖ Arduino IDE

Using MIT App Inventor we have designed an app by ourveselves called ―Home control APP,‖ using which we can control the prototype _‘Smart Home‘‘ by establishing a bluetooth connection through the app.



CLEANING ROBOT

S.Anusha chowdary

(16A31B0510)

K.Kanaka Prabhasna

(16A31B0527)

Automatic floor cleaners are nothing new, but they all share a common problem. They all are too expensive for what they do. Today, we will make a Automatic Home cleaning Robot that only costs a small fraction of the ones in the market. This Robot can detect the obstacles & objects in front of it and can continue moving, avoiding the obstacles, until the whole room is cleaned. It has a small brush attached to it to clean the floor.

Components Used:

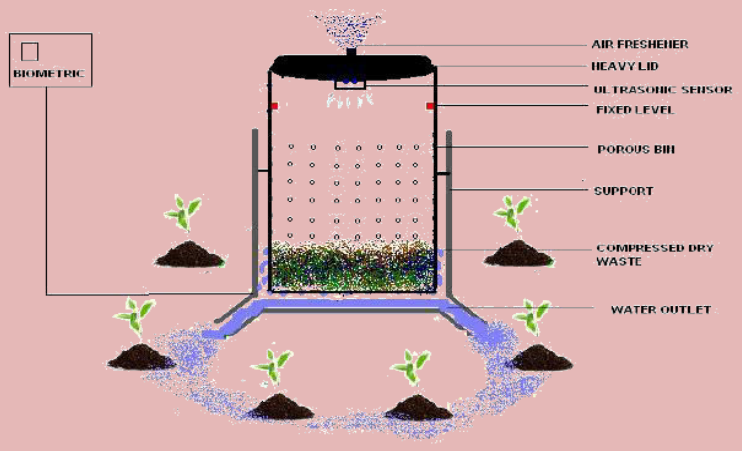
1. Arduino UNO R3.
2. Ultrasonic Sensor.
3. Arduino Motor Driver shield.
4. Wheel Drive Robot Chassis.
5. Computer to Program the Arduino.
6. Battery for the Motors
7. A Shoe Brush.

We tried our best to develop a floor cleaning robot with low cost and high accuracy of work. We made a Automatic Home cleaning Robot that only costs a small fraction of the ones in the market.

ECO-FRIENDLY SMART BIN

P Vamsi Janakiram

(17A31B0553)



K K K Prasanthi

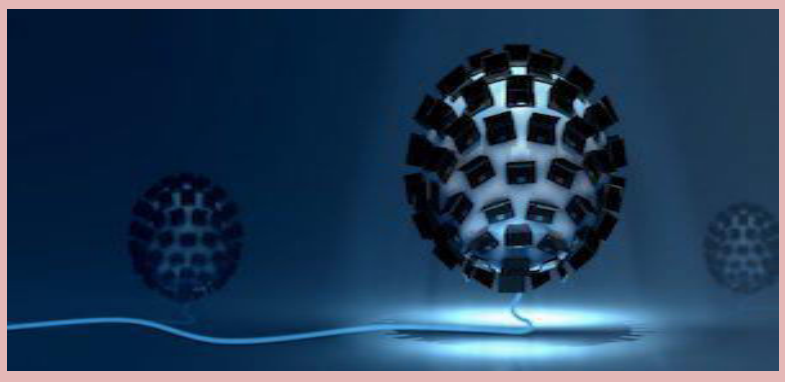
(17A31B0514)

From the advent of mankind, to this day there is a huge increase in urbanization and technology but there is one major problem which is never solved i.e., waste management. Improper waste management causes pollution and diseases. So, to solve this problem we came up with an idea which is cost effective and eco-friendly.

The heavy lid is attached with motor which automatically moves the lid into the dustbin on disposal of waste. This results in compression of waste which not only increases the available space in dustbin but also supplies the water collected through compression to nearby plants. The ultrasonic sensor monitors the level of waste in the dustbin and informs the concerned municipality. We can use a GSM module or a Wi-Fi module for this purpose based on the signal available in that area and the range in which the municipality is present (Wi-Fi module uses local internet connection for communication whereas GSM module covers wider range). They are also covered to protect them from damage when wet waste is dumped into dustbin.

IFTTT applets are of great help when it comes to communication between devices and apps. These applets will help in informing the municipality. It also calculates the stats of messages received. These stats can be used to know if there are enough or more than enough dustbins in a particular area. To differentiate between areas a code is assigned to each area and this code is reflected in the messages received. Each municipality can operate the dustbins in their area with the help of a button. By using this they can lock the dustbin when its full. There is an air freshener attached to the dustbin which reduces stinky odour.

Real-Time AI at the Edge Computing



16A31A0532
VADREVU SAI KARTHIKA

Moving toward next chapter: Training AI models closer to where data is collected at the network edge.

SAS Institute is betting that one of the primary use cases of artificial intelligence (AI) will soon revolve around applying predictive analytics to processes running at the network edge in real-time.

The company is investing more than $1 billion, in part, to enable AI models to be trained where data is being collected at the edge, says Oliver Schabenberger, executive vice president, chief operating officer, and chief technology officer for SAS. The goal is to advance AI use cases involving edge computing scenarios, he says.

Cutting Down on Cloud Data Transfer

That will be a big change. AI today requires moving massive amounts of data into a single location where machine and deep learning algorithms can be cost-effectively applied to training a model. That AI model is then applied to with the context of an inference engine.

Right now, much training of AI models occurs in the cloud using graphical processor units (GPUs), which have proven more efficient at processing machine and deep learning models. Traditional x86 processors, and sometimes GPUs or other emerging technologies, are employed. These run the AI inference engine created by AI models – ideally as close as possible to where the application augmented by the AI model is running.

See also:SAS Opens Wallet Wide with AI Investment

The big problem is deploying and dynamically updating AI inference engines against ever-changing real-time data. Some use cases involving streams of real-time data with little variance are fairly simple to augment. It's done by using an AI model that has been trained to recognize that data.

But in use cases involving an automobile, for example, new types of data are constantly being streamed into the environment. That makes it tough to predict every possible scenario. So while a red light is highly predictable, a child chasing a ball onto a rainy road is not.Fortunately, as compute horsepower available at the edge becomes increasingly affordable, it will become less necessary to move massive volumes of data into the cloud to train an AI model, explains Schabenberger. "It will be possible," he says, " to train AI models at the edge."

Reference:https://www.rtinsights.com/sas-institute-looks-to-real-time-ai-at-the-edge/

Blockchain Technology for Healthcare

Blockchain Technology has the potential to disrupt the healthcare industry's centralized operations, opening the door for optimized business and service delivery. The Distributed Ledger Technology (DLT) is an innovation fertile with the possibility of improved transparency, security, and efficiency. Smart contracts on the blockchain operate automatically without third-party personnel needed to verify documents or specific steps using pen-and-paper processes. With automation comes a reduction in the notorious bureaucracy that currently stands in the way of patients receiving the best care possible.

16A31A0522
MALLAVARAPU VEERA SRI MOUNIKA

Main Industry Areas for Blockchain Applications in Healthcare

Healthcare isn't just limited to the doctor's office; there are countless agencies, direct care professionals, and patients involved in a single healthcare ecosystem. Healthcare ecosystems also vary from country to country, this guide is very US-centric. In the United States, there is a much wider net cast when the term "health care" is used. There is an intricate web of pharmaceutical companies, health insurers, primary care providers, in-network specialists, private hospitals, public hospitals, Medicare, and Medicaid. All of these must work in harmony to provide the general population with adequate care.

Here is a list of some of the main areas where blockchain applications could improve overall healthcare delivery ecosystem:

- Health Insurance
- Pharmaceutical
- Private healthcare providers
- National healthcare systems
- Medical research
- Nursing homes & elder care
- Dentistry
- Healthcare Administration

Conclusion

The healthcare industry has a lot to gain from adopting this latest wave of decentralized technology. The mechanisms that currently make the healthcare industry run are

outdated, time-consuming, and expensive. Blockchain might not revamp the entire industry overnight, but it is still important for healthcare professionals, administrators especially, to learn the value of the distributed ledger. When web 3.0 solutions are introduced, they might be initially expensive or difficult to onboard, but the long-term benefits outweigh the short-term concerns. Smart contracts are a crucial piece to enabling automation to replace error-ridden pen-and-paper healthcare processes. Disrupting the healthcare system with decentralized technology can revolutionize every corner of the supply chain (if deployed correctly) and create a situation where everyone in the existing ecosystem could benefit.

Reference:

https://www.blockchaintechnologies.com/applications/healthcare/

Artificial Intelligence Chatbots

Consumers are already using chatbots to chat with friends and colleagues without waiting for a long time for a response. Chatbots automate responses to potential buyers' frequently asked questions and provide them a way to search for the product or service they are looking for.

Live person:

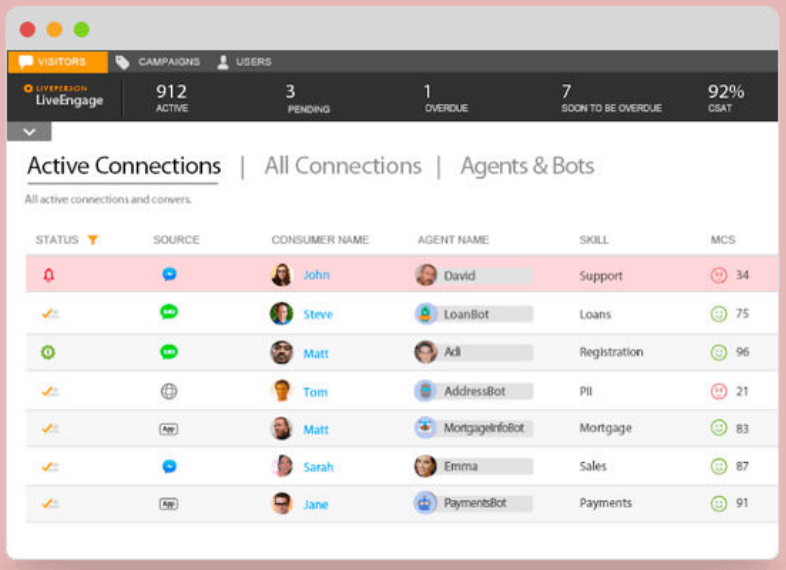


Image Credit: LivePerson

By collecting over 20 years of messaging transcript data and feeding it to their AI-powered chatbot, LivePerson can automate almost every industry's messaging and integrate with most messaging channels like your website, mobile app, Apple Business Chat, text messaging, Google Rich Business messaging, Line, Facebook Messenger, WhatsApp, and Google AdLingo.

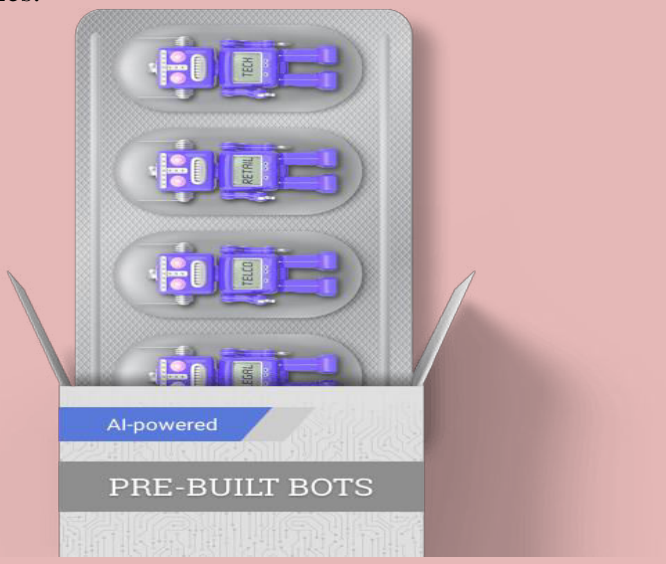
LivePerson's BotStudio also lets you build chatbots from scratch, without any coding knowledge, and its analytics

16A31A0593
VASAMSETTI UMADEVI

dashboard can track metrics like real-time sentiment, bot containment rate, bot conversation time, total conversation time, average order value, and bot contained sales, allowing you to grasp the impact your chatbot has had on your business' bottom line.

AI-powered chat bots

Automate upto 70% of message conversations on your website, SMS,FACEBOOK messenger,Apple Business chat WhatsApp and more live person has a complete solution to create,manage,and optimize bots for business of all sizes.



Get up and running quickly with pre-built bots

We used decades of consumer data and a powerful AI-engine to build industry-specific chatbots that are easy to implement and customize. These ready-to-go bot templates address industry-specific use cases and include pre-configured intents and dialogue flows along with necessary integrations into back office systems. With advanced natural language processing capabilities, you can rest assured that consumer inquiries will trigger the right bot responses for a seamless conversational experience on the most popular messaging channels.

Real-time intent analysis for improved customer interactions

LivePerson's LiveIntent uses AI to examine consumer conversations, identify intents in real time, and deliver actionable insights for brands to quickly optimize messaging and automation operations.

It features a holistic dashboard that makes it easy to discover and define intents, prioritize intents with the highest impact, and measure how well specific intents are handled throughout the entire consumer journey.

Reference: https://www.liveperson.com/products/ai-chatbots/

AUGMENTED AND VIRTUAL REALITY

16A31A05A5
GUDAPATI SAI TEJA

AR technology combines digitally created data with that from the physical world. The user sees existing environments overlaid with computer-generated imagery. Accessibility on smart phones is one of AR's advantages, and it's actively finding applications in everyday life. The growing number of mobile devices, their extending functionality, and increasing Internet speed promote AR's expansion. More companies are looking towards using augmented reality in business.

A VR experience takes place in a wholly simulated isolated reality, which makes it an excellent medium for gaming or 3D films.

Best Virtual and Augmented Reality Business Opportunities

Games, Leisure, and Entertainment

The viral Pokémon GO is still the first AR app that comes to most people's mind when they think of AR. Oculus Quest, the first all-in-one system built for VR, is predicted to drive a massive surge in demand for VR gaming. Simultaneously, more people are experimenting with different ways of playing and building social gaming scenarios with both VR and AR. If you run an arcade center, investing in VR equipment and AR/VR games is going to bring in more customers and increase your revenue.

VR has also started venturing into some segments of sports.360-degree video approach and VR capabilities will take live broadcasting of sports events, concerts, and other shows to new levels, providing exciting immersive experiences to aficionados around the world

E-commerce and Retail

Augmented reality app development is about to reshape on- and off-line shopping. AR apps let shoppers interact with products and help in creating personalized shopping experiences. In 2019, fashion and beauty brands particularly are expected to push the boundaries with AR and VR for shoppers who visit their stores.eBay's tool using AR already facilitates shipping. Since 2017, IKEA's Place app has been enabling consumers to see how furniture would look and fit into their interior - without leaving home.Big companies are even introducing VR payment systems where virtual shoppers can pay for items without stopping the VR experience.

Tourism and Travel

Tourism industry abounds with augmented reality business opportunities. Google Maps has got an AR upgrade recently. Users can view the streets through their smart phone's camera, and the directions appear on their screen. GPS apps powered by AR might show tourist routes, translate the signs on the street, and give sightseeing tips. AR combined with Wi-Fi, beacons or ultra-wideband will facilitate indoor navigations. Airports, train stations, trade shows, shopping malls, and offices will become visitor-friendlier.

Education and Training

AR and especially VR can deliver realistic psychological and physical experiences through immersive real-life simulations in a safe environment. The technologies thus bring unlimited possibilities for teaching and learning processes.AR technology makes schooling more interactive, engaging, and efficient. For instance, with AR applications, students can observe a 3D galaxy on their tablets or witness an extinct animal come to life. VR will help students to see scientific breakthroughs from the scientists' perspective or even make the discoveries in a virtual lab themselves. VR training simulators are used in aviation, automotive, construction, energy, medical, and military industries, as well as by professional athletes. VR-assisted solutions reduce costs and boost training retention and performance.

Reference: https://onix-systems.com/blog/top-10-applications-of-ar-and-vr-in-business

Autonomous Mobile Robots

Many mobile robots are remotely controlled, performing tasks such as pipe inspection, aerial photography and bomb disposal that rely on an operator controlling the device. These robots are not autonomous; they use their sensors to give their operator remote access to dangerous, distant or inaccessible places. Some of them can be semi-autonomous, performing subtasks automatically. The autopilot of a drone stabilizes the flight while the human chooses the flight path. A robot in a pipe can control its movement inside the pipe while the human searches for defects that need to be repaired. Fully *autonomous mobile robots* do not rely on an operator, but instead they make decisions on their own and perform tasks, such as transporting material while navigating in uncertain terrain (walls and doors within buildings, intersections on streets) and in a constantly changing environment (people walking around, cars moving on the streets).

The first mobile robots were designed for simple environments, for example, robots that cleaned swimming

16A31A0581 MEKA
NITYA MANI SRI VARSHA

pools or robotic lawn mowers. Currently, robotic vacuum cleaners are widely available, because it has proved feasible to build reasonably priced robots that can navigate an indoor environment cluttered with obstacles.

Many autonomous mobile robots are designed to support professionals working in structured environments such as warehouses. An interesting example is a robot for weeding fields (Fig. 1.4). This environment is partially structured, but advanced sensing is required to perform the tasks of identifying and removing weeds. Even in very structured factories, robot share the environment with humans and therefore their sensing must be extremely reliable.

Fig. 1.4
Autonomous mobile robot weeding a field
(Courtesy of Ecorobotix)

Perhaps the autonomous mobile robot getting the most publicity these days is the self-driving car. These are extremely difficult to develop because of the highly complex uncertain environment of motorized traffic and the strict safety requirements.

Much of the research and development in robotics today is focused on making robots more autonomous by improving sensors and enabling more intelligent control of the robot. Better sensors can perceive the details of more complex situations, but to handle these situations, control of the behavior of the robot must be very flexible and adaptable. Vision, in particular, is a very active field of research because cameras are cheap and the information they can acquire is very rich. Efforts are being made to make systems more flexible, so that they can learn from a human or adapt to new situations. Another active field of research addresses the interaction between humans and robots. This involves both sensing and intelligence, but it must also take into account the psychology and sociology of the interaction.

Reference:

https://link.springer.com/chapter/10.1007/978-3-319-62533-1_1

BIOMEDICAL IMAGE SEGMENTATION USING U-NET

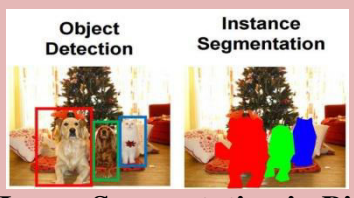
Vaddi Pramod Harsha
16A31B0557

Introduction:

In the field of biomedical image annotation, we always **need experts**, who acquired the related knowledge, to annotate each image. And they also **consume large amount of time to annotate**. **If the annotation process becomes automatic, less human efforts and lower cost** can be achieved. Or it can be act as an assisted role to **reduce the human mistake.**

Image Segmentation:

- In Computer Vision, Image Segmentation is partitioning a digital image into multiple segments.
- It is done so as to analyze a digital image in an easier and more effective manner.
- The result of image segmentation is a set of segments that are grouped into classes.
- Each of the pixels in a region are similar with respect to some characteristic or computed property, such as colour, intensity, or texture.



Use of Image Segmentation in Biomedical field:

- Image segmentation is done on X-rays, Ultrasound, MRI or CT scans.
- The current condition of an organ or tissue of a patient can be monitored over time for diagnostic and treatment evaluation.
- It helps in diagnosing medical issues in a clear manner for complex cases.

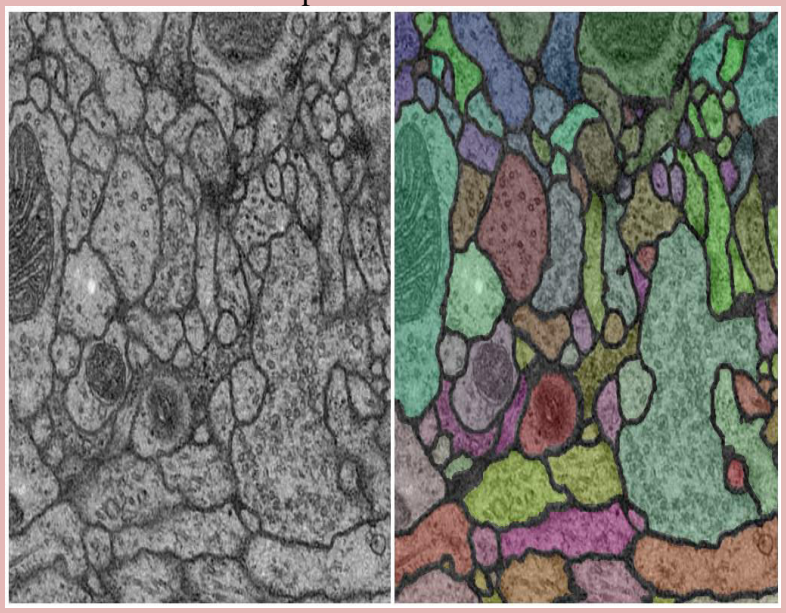


Fig: Segmented Image of a tissue

U-NET Model:

- **U-Net** is a convolutional neural network that was developed for biomedical image segmentation.
- The network is based on the fully convolutional network and its architecture was modified and extended to work with fewer training images.
- It yields more precise segmentations when compared to other image segmentation models.
- The advantages of U-NET model :
  1. Computationally efficient
  2. Trainable with a small data-set
  3. Trained end-to-end
  4. Preferable for bio-medical applications

Conclusion:

- Image segmentation is being emerged as a powerful topic in computer vision.
- It is multidisciplinary topic that is being used all over the world for image analysis.
- Many models exist for image segmentation, but U-NET emerged as the most significant model.

References:

https://en.wikipedia.org/wiki/Image_segmentation
https://towardsdatascience.com/understanding-semantic-segmentation-with-unet-6be4f42d4b47

Cloud Computing in the Banking Industry

The banking industry is home to a large volume of consumer data and is always eager to provide the best services to its customers. In such a scenario, the cloud computing technology serves as a transformative digital solution which offers unparalleled levels of security, agility, and scalability to the banking sector while boosting its capability to handle consumer data.

Strategically implemented cloud computing services allow banks to utilize resources in a highly flexible and efficient manner with the help of data analytics, data storage, and batch processing. Further, the cloud technology also helps the banking industry to improve revenues, operational efficiency, and the client servicing department.

16A31A0563
CHAGANTI
AMRUTHA SANDHYA

Let us now see in detail some of the best ways the cloud computing technology benefits the banking industry:

- **Flexibility**

The cloud enables the banking industry to rapidly adapt to the ever-changing consumer and market needs. It provides an additional room for banks to meet future consumer demands and this flexibility helps banks to sustain in the market.

- **Agility**

Cloud-based services can greatly enhance the productivity, agility, and efficiency of the banking industry. It can help banks to reallocate resources and relieve their IT staff from the administration of IT infrastructure, allowing them to focus on more innovative tasks such as accelerating a product's or service's time to market.

- **Auto Scalability**

On demand cloud services enable the banking industry to automatically scale resources according to the requirements of the consumers.

- **Operational Efficiency**

The cloud technology facilitates banks with the maximum possibility of integrating new technologies and applications in future which maximizes the productivity of their operations. It allows the IT staff of banks to focus on their core business operations and improve processes for achieving higher operational efficiency. Leveraging a centralized management of data, cloud can also help banks to eliminate complexities related to the changes and increase of data.

- **Better Client Servicing**

Cloud computing facilitates banks in faster development of products and services. It not only allows the banking industry to boost computing power in order to meet the growing demands of their customers, but also provides better insights which helps banks to create customized services for their clients.

While it is true that the cloud computing technology has the power to transform the banking sector, it is extremely important to opt for cloud computing services only from the leading cloud service providers in India having globally recognized certified consultants who have vast experience in providing banks with customized, state-of-the-art cloud solutions which help in increasing their overall business efficiency and productivity.

Reference:https://www.e-pspl.com/blog/cloud-computing-in-the-banking-industry

J L S Durga Kiranmayi
16A31A0570

DRAINWARE

We understand that the privacy and security of your personal information is extremely important. Therefore, this policy establishes what we do with your information and what we do to keep it safe. It also explains where and how we collect your personal information, as well as your rights over any personal information we have about you. This policy applies to you if you use it through our mobile applications or otherwise use our websites or interact with us on social media (our "Services").

This policy defines our firm commitment to protect your personal information. Therefore, we strongly recommend that you read and accept our privacy policy before continuing to browse. This privacy policy has been updated for the last time on January 3, 2019.

DRAINWARE SYSTEMS SL only stores your personal information to the extent that we need it in order to use it for the purposes indicated in point 5, and according to the legal basis of the treatment thereof in accordance with applicable law. Your personal information will be maintained as long as there is a contractual and / or commercial relationship or until you exercise your right to delete, cancel and / or limit the processing of your data.

Once the relationship with you has terminated for any of the reasons indicated, the information will be duly blocked, without giving any use, while it may be necessary for the exercise or defense of claims or may derive some type of judicial, legal or Contractual treatment, which must be attended and for which recovery is necessary.

Those data that are treated for direct marketing purposes will be kept indefinitely until the interested party requests their deletion

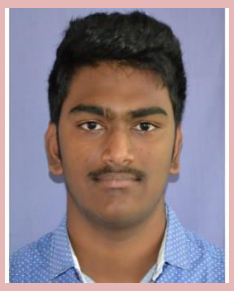
Reference: https://www.drainware.com/privacy-policy/

ElliQ

Intuition Robotics has been working on its ElliQ "proactive social robot for older adults" for only a few years—the company, founded in 2016, has managed to secure funding from Toyota AI Ventures, Samsung, and iRobot, among others. For nearly a year, Intuition has been testing ElliQ in the homes of beta testers aged 62-97 in the San Francisco Bay Area, and things have apparently gone well enough that they've decided that the robot is ready to go on sale.

ElliQ is specially designed with and for older adults to give them everything they need to stay sharp, connected and engaged. Interacting with ElliQ and the world is easy and fun, and through AI she becomes even more helpful by learning what you like and need.

It enables family members to easily check-in with you and help with the day-to-day, creating more quality time together wherever you live. It suggests personalized activities at the right time, keeping you sharp, active and engaged. As you start to get to know ElliQ, she gets to know you and her suggestions grow better tailored to what you might want. It responds to you—to your voice, to your gaze, even to your touch—in ways that go beyond speech. Her body language intuitively helps you understand and communicate at a deeper level.



Kommoju Venkata Prasanth
16A31A05A9

Reference Site :
https://spectrum.ieee.org/automaton/robotics/home-robots/elliq-a-social-home-robot-for-older-adults-now-available-for-preorder

Korukonda Mahesh Kumar
16A31A0541

EMOTION BASED MUSIC PLAYER

Features:

The facial expressions categorize into 5 different of facial expressions like anger, joy, surprise, sad, and excitement

• An emotion model is proposed that classifies a song based on any of the 7 classes of emotions viz sad, joy-anger, joysurprise, joy-excitement, joy, anger, and sad-anger.

Requirement:

• Track User Emotion

• Recommend by Sorting playlist based on user's current emotion

• Sort songs by 2 factors o Relevancy to User Preference o Effect on User Emotion

Advantages:

 Extremely fast feature computation

 Efficient feature selection

 Scale and location invariant detector

 Instead of scaling the image itself (e.g. pyramid-filters), we scale the features.

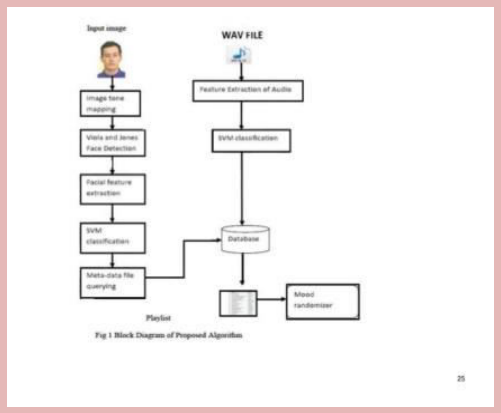
 Such a generic detection scheme can be trained for detection of other types of objects (e.g. cars, hands)

Emotion extraction module:

• Done by the analysis on Images, Image of a user is captured using a webcam or it can be accessed from the stored image in the hard disk.

• This acquired image undergoes image enhancement in the form of tone mapping in order to restore the original contrast of the image.

• converted into binary image format for the detection of face using Viola and Jones algorithm (Frontal Cart property)



REFERENCES:

https://www.slideshare.net/nizamotp/emotion-based-music-player-58090818?from_action=save

Harmful Mail Scanning a Java Project

Harmful Mail Scanning

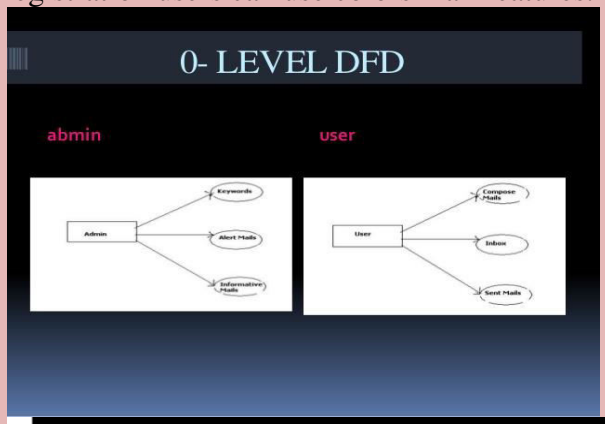
Puppala Susmitha
16A31A0586

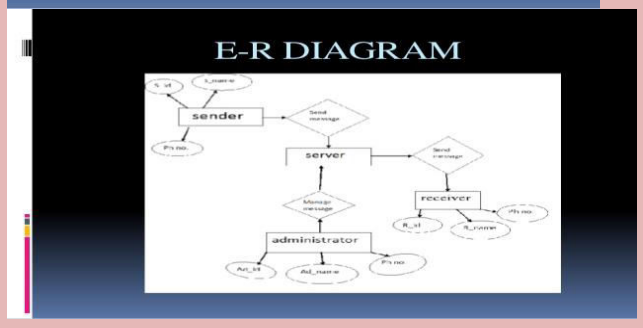
Harmful mail scanning project report explains about developing a software application which can scan mailing information and identify suspicious mails which contain information like bombs, attacks and suicides and store these mails in to database. Administrator can access these mails and identify user location based on ip address and take required action. This project report provide details about modules implemented in this project, hardware and software requirement, system architecture, system design and sample code.

This application is developed in five modules

Login Module

This module provides login option for users and administrators for accessing colors mail system. After registration users can use colors mail features.





Registration Module

This module is for new users who are not at using colors mail, in order to use colors mails first users need to fill registration from and submit to administrator.

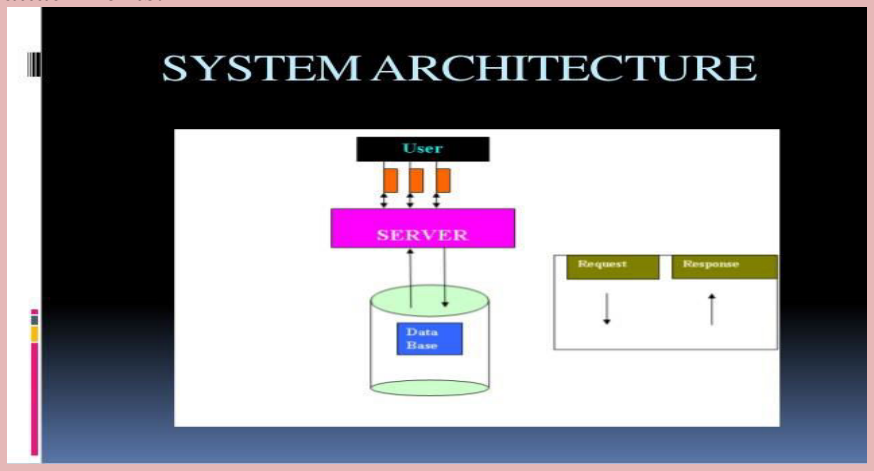
Administration Module

Admin module provides setting option for administrator for listing out keywords which are to be scanned, in this module admin will analyze scanned mails or harmful mails information.

Encryption Module

This module provides keyword encryption option for administrator and update encrypted data to database which are then managed by admin.

After registration users can log in to their account using log in and password and access then access this module for sending mails, reading mails and sending attachments.



NIGHT PATROLLING ROBOT

Security is a common concern for all. Nowadays Women Safety is the biggest concern in many parts of the world. There is still a fear in alone areas for women as well as men. As most of the crime occurs at night, so the IoT project comes up with a solution that is a patrolling robot that uses a night vision camera. This robot patrol over a predefined path and detects alarming sound. So here we propose a security patrolling robot using Raspberry PI. The system uses cameras and mics mounted on robotic vehicle for securing any premises. The robotic vehicle moves at particular path and is equipped with camera and sound sensors. It uses a predefined line to follow its path while patrolling. It stops at particular points and moves to next points if sound is detected. The system uses IR based path following system for patrolling assigned area. It monitors each area to detect any problem using combination of two HD cameras. It has the ability to monitor sound in the premises. Robot hears Any sound after area is quite and it starts moving towards the sound on its predefined path. It then scans the area using its camera to detect any human faces detected. It captures and starts transmitting the
immediately to the IOT website. Here we use IOT gecko for receiving transmitted images and displaying them to user with alert sounds. Thus we put forward a fully autonomous security robot that

Vasamsetti Sai Jyothi
16A31A0533

User Module

operates tirelessly and patrols large areas on its own to secure the facility.

Features:

The basic first variation is fitted up with highly-sensitive panoramic CCD cameras. This variation is designed for patrolling dimly lit areas, possibly covered with trees or other obstacles that limit the monitoring distance to 16–22 yards. Six video cameras form a 360-degree monitoring panorama around the robot. A security station operator can see the video image from all the cameras simultaneously.

Reference:https://nevonprojects.com/women-safety-night-patrolling-robot/

Octopus

Unless you happen to work in security, you probably don't give much thought to the complex security systems that are in schools, malls, factories and companies. These facilities -- manned by security guards and equipped with monitors to multiple security cameras -- are hidden away from plain view.

Octopus, an Israeli startup, gives surveillance personnel more flexibility while enhancing security. Combining a comprehensive software with a robust smart phone application, Octopus is a Physical Security Information Management system (PSIM) enabling organizations to effectively

Batchu Tirupathi Swamy
16A31A0598

manage all their security, safety and logistical needs from one place.

Octopus is a new and innovative Physical Security Information Management system (PSIM), which combines a comprehensive security management software with a robust smart phone application, enabling organizations to effectively manage all their security, safety, cyber, and operational requirements from one place.

Octopus brings together all security and safety systems, sensors, cyber and data sources in order to streamline and improve the

efficiency and responsiveness of the organization's security operations.

Mitigate risk and monitor key performance indicatiors (KPIs) with the Octopus Performance and Monitoring System; a robust dashboard offering a unified view of operational and facilities data from internal and external sources.

The advantage of Octopus software is that it can interface with all security systems within an organization, including alarms, fraud prevention, alerts of cyber attacks, safety, entrance monitoring and closed-circuit cameras. Unifying all these means of protection, spares companies unnecessary expenditures on expensive accessory equipment for the system.

Reference:

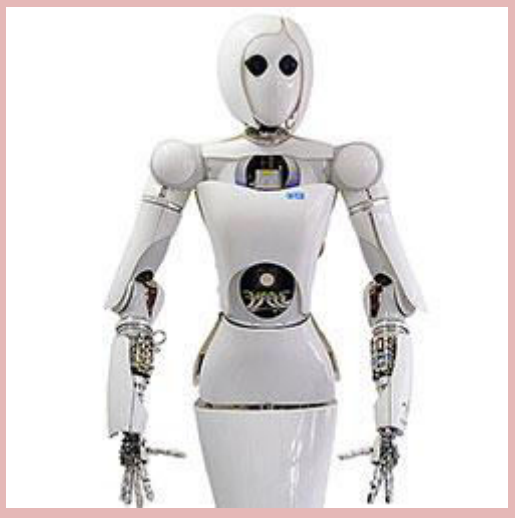
https://octopus-app.com/about-us/

Robotic World

Gubbala Gowthami
16A31A0568

According to a Forrester report, robots will eliminate 6 percent of all jobs by 2021. McKinsey's assessment is even more expansive — they believe that by 2030 one-third of jobs could become automated. This, however, doesn't mean that life will soon be like "The Jetsons." As technological developments have done in the past, the next generation of robots utilizing artificial intelligence and automation to streamline processes currently handled with the assistance of human workers will significantly alter the job market. This idea represents a form of disruptive innovation, a term that refers to when an emerging technology can utilize fewer resources, thus competing betteragainstthose without it. The impact that automation has already had is significant. Despite of the fact that more than 5 million factory jobs since 2000 have ceased to exist, manufacturing output has increased between 2006 and 2013 it rose by 16.7%! To determine people's feelings about this, we surveyed over 2,000 people and asked what industries they work in, how they feel disruptions might affect their labor market, what they think they will do if directly affected, how many people understand the concept of disruptive innovation.

Knowledge Is Innovative Power:



Of the 2,000 professionals polled, fewer than 40 percent were familiar with "disruptive innovation." Disruptive innovation was coined in a 1995 issue of the Harvard Business Review; it regarded the evolution of

technology in each industry. Despite Millennials living in a time where new technology is causing vast disruptions in the modern marketplace due to their purchasing decisions, almost 60 percent of survey respondents of that generation were unaware of the concept. Gen Xers were the most familiar with the phrase (54 percent), while almost 40 percent of millennials also were in touch with the concept. However, centennials were the least familiar with disruptive innovation.

Looming Disruptive Concerns:

Of those who acknowledged they were afraid of possible downsizing in their market, the publishing industry had the highest level of concern, with 50 percent of respondents telling us they were fearful of layoffs. While major layoffs in the publishing sector have already occurred, the continued trend toward digital publishing is a disruptive force that may have yet to fully run its course. Respondents who felt layoffs would most impact them were temporary employees (60 percent). Fifty-six percent of consultants and 53 percent of junior managers also admitted concerns about layoffs. Upper management, trained professionals, and administrative staff were the least concerned. Despite their cavalier attitude to being replaced, the 2016 Economic Report of the President to Congress offers a more dire assessment — those in the $40/hour wage range face a 31% chance of job loss due to automation.

Life After Disruptive Innovation:

If men and women are displaced due to disruption, their plans vary slightly as to whether they'd seek a new job in the same industry or a different one. Men were more likely to find a job in their current field (44 percent), while women were more likely to find a job in a different industry (45 percent). While some men (14 percent) and women (18 percent) would pursue additional education, it doesn't seem to be the first choice for either gender. Age also plays a factor in what respondents would do. Centennials (57 percent) and millennials (nearly 42 percent) would opt to find a new job within their current field — with the former being more likely to hit the books and seek additional education (19 percent). Over 30 percent of baby boomers would consider hanging up the "employed" status for good, choosing to retire instead of looking for another job.

Reference: https://www.wikipedia.org/

Shanjana Kumari Nayak
16A31A0592

These sci-fi contact lenses can zoom in and out, based on how much you blink

Tired of switching between your regular glasses and reading glasses? Or just willing to put anything vaguely sci-fi into your body? Researchers have developed a pair of contact lenses that can adjust between two different prescriptions in the blink of an eye.

Well, two blinks of an eye. As reported by Gizmodo, users simply have to blink twice in quick succession to zoom in and out, replacing the need for spectacles for various prescriptions, and bringing us ever closer to a cyborg future.

- When will the Apple AR glasses be released?

- What are the best AR apps out now?
- Huawei's new 'smart glasses' are just a Bluetooth headset with lenses

The lenses were described in a published paper titled A Biomimetic Soft Lens Controlled by Electrooculographic Signal, which calls the lenses "a novel human–machine interface [...] mimicking the working mechanisms of the eyes of human and most mammals."

The paper also speaks of the "potential to be used in visual prostheses, adjustable glasses, and remotely operated robotics in the future", with various applications across the worlds of health tech, wearables, and even augmented reality (AR).

The use of AR is on the rise, with smart glasses like Snap Inc's Spectacles, AR headsets like the Magic Leap One, and accessibility measures like the Epson Moverio (which display subtitles during theatre performances through a pair of glasses) all taking the technology mainstream.

Science, or science fiction?

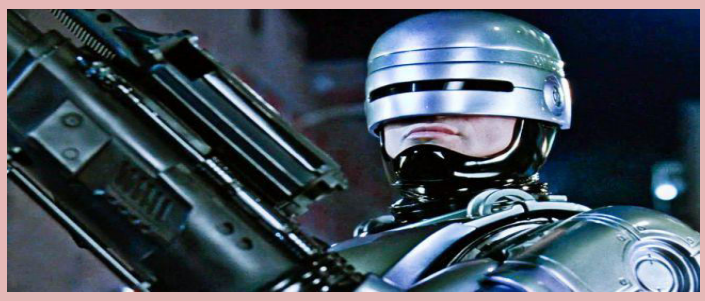
While auto-zooming contact lenses sounds like something out of Blade Runner or RoboCop, the ability to focus at different distances is one of the most basic visual functions of the human eye. It's something we do constantly on a day to day basis as we swap our gaze between our smartphones, our laptops, our 4K TVs, and – you get the idea.

But for those of us with impaired vision, certain distances are harder than others. Having the kind of medical tech that can flexibly adjust our depth perception could be a game changer for optometry.

It's not on shelves yet, but we could easily foresee this technology making its way into opticians, and potentially even being offered through national health services, if it became manufactured on a large scale.

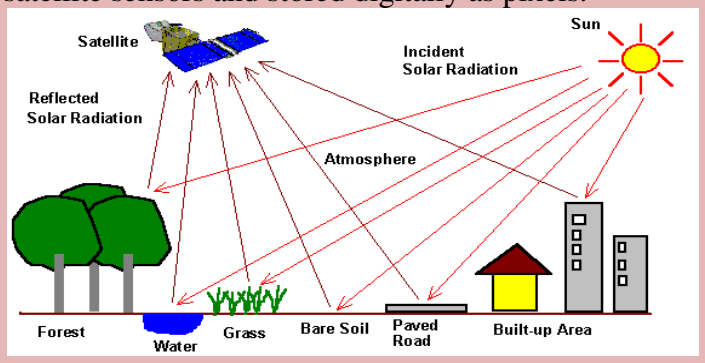
One potential issue is that humans tend to blink involuntarily – and accidentally refocusing your field of vision every time you blink in quick succession could be a bit disorienting. The lenses currently also require an array of electrodes around the user's eyes, and are being used in highly controlled test conditions.

Even so, the far-off future of bodily enhancements looks to be coming into focus.



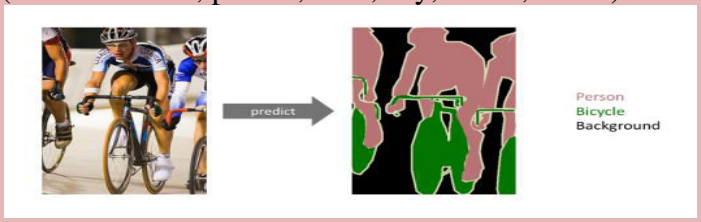
Satellite Image Processing Using Machine Learning & Deep Learning

Introduction: Satellite Image Processing is a kind of remote sensing which works on pixel resolutions to collect coherent information about the earth surface. Satellite imagery is a special case of digital photography. Radiation bands in the electromagnetic spectrum that are reflected from the Earth's surface back into space can be collected by satellite sensors and stored digitally as pixels.

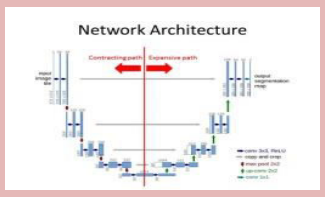


Gorla Kiran Kumar
16A31A05A4

Image Segmentation: Segmentation is essential for image analysis tasks. Semantic segmentation describes the process of associating each pixel of an image with a class label, (such as flower, person, road, sky, ocean, or car).



U-NET for Satellite Image Processing: The UNET was developed by Olaf Ronneberger et al. for Bio Medical Image Segmentation. The same can be applied for satellite image segmentation. This approach gives high accuracy with less training data.



A U-Net is like a convolution auto encoder, But it also has skip-like connections with the feature maps located before the bottleneck (compressed embedding) layer, in such a way that in the decoder part some information comes from previous layers, bypassing the compressive bottleneck. Thus, in the decoder, data is not only recovered from a compression, but is also concatenated with the information's state before it was passed into the compression bottleneck so as to augment context for the next decoding layers to come. That way, the neural networks still learns to generalize in the compressed latent representation (located at the bottom of the "U" shape in the figure), but also recovers its latent generalizations to a spatial representation with the proper per-pixel semantic alignment in the right part of the U of the U-Net

Applications:

1. Yearly analysis of crops.
2. Amount of crop area generated.
3. Area under distruction due to calamities.
4. Area's that can be renowed for welfare.

Conclusion:

I conclude that by using UNET, we get high accuracy with very limited data-set. It helps us to get a better result by increasing quality of training dataset. So, over all U-is a very efficient technique for image segmentation to extract features from satellite in Images.

Dasari Rohit
16A31A05A2

BLOCKCHAIN PHONE

"The blockchain is an incorruptible digital ledger of economic transactions that can be programmed to record not just financial transactions but virtually everything of value."

A blockchain is an encrypted and shared database that's spread across more than one computing device. This means that every person with access can modify that ledger without waiting for someone else to finish any edits. Blockchain is an immutable, decentralized ledger. The ledger is a list of transactions, or blocks, that are distributed across a network of different devices, or nodes, instead of being held on a central server. Every user has a private key and a public key which they can use together like a digital signature to create a new block. Each block is verified by the network and then added to the chain. Once added, it cannot be altered.

A blockchain is transparent and the data is available to anyone who has software that needs to access it.

There is no master copy and as long as enough computers host the data, there would never be a computer powerful enough to find every copy and corrupt it.

Any change to the data (such as a BitCoin transaction) happens through a validation system that apps like a coin wallet can interact with. Every node in the chain validates each transaction to ensure that it's valid.

A blockchain keeps a record of every transaction (change to a data point) and each transaction holds information about where it originated.

How will you use blockchain in a phone?

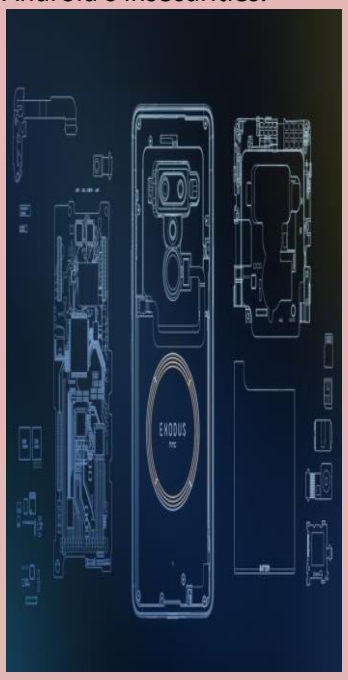
HTC's Exodus smartphone joins blockchain phones from lesser known names like Sirin Labs and Sikur. It's about the internet, where it's going, and what's wrong with it right now. Our position is that there's something deeply wrong right now because people don't own their digital identities; they don't own their digital data; they don't own their personal data. Whether it's behavioral data, commercial data, health data, browsing data, or something else, all of that is owned by a handful of companies.

We use ostensibly free services from the likes of Google and Facebook with some understanding that they're not really free — we are

trading our data in return for those services. It's clear that companies with enormous, centralized data hoards are finding

ways to monetize that information. In fact, their business models are based on selling insights and targeted advertising.

The HTC Exodus 1 is an Android phone with a secure enclave that allows you to keep possession of your own keys, and potentially your own data, instead of Google, Apple, an exchange, or some other company holding them for you. It's effectively an Android phone like any other with all the same functionality, but it has this additional locked area that's protected from Android's insecurities.



What we've built is like a parallel micro operating system that's secure. So, for certain secure transactions, in this case holding your private keys and signing transactions in the crypto space, you use that secure enclave.The first application of this is to allow you to hold cryptocurrency or other crypto assets like non-fungible tokens securely, but it is seen as the foundation of being able to own and hold your own digital identity and data.

Reference : https://www.digitaltrends.com/mobile/what-is-a-blockchain-phone-we-asked-an-expert/

THE SUPERHUMAN DOCTOR

Rotta Shama Sudheer
16A31A0555

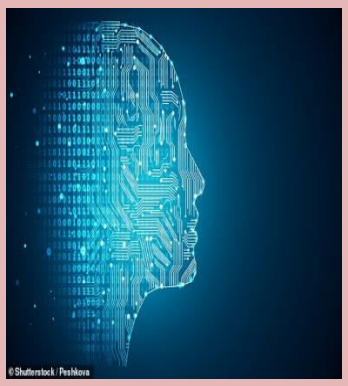
AI is not only able to save certain areas of the ecosystem, but it can also save human lives…

Through AI and deep learning, doctors can promptly diagnose cancer before it's too late. The Chinese startup Infer vision is using deep learning and image recognition technologies (like Face book uses to recognize faces) to diagnose possible signs of lung cancer with X-rays. AI is changing the face of medicine giving doctors better tools to detect and diagnose conditions before they arise.

Artificial intelligence (AI) is gaining traction in the medical field. In August 2019, UK-based startup Babylon Health, which has developed a number of AI-based health services, closed a $550 million round of funding. The brand, now valued at more than $2 billion, states that the most recent round marks the largest-ever fundraise in Europe or the US for a digital health company.

This new record is certainly a sign of the times: a host of recent AI applications are giving doctors bionic diagnostic abilities, even predicting conditions a whole two days before symptoms present. Now these advances in technology are revolutionizing the medical field by merging human expertise, deep data and mechanical precision to yield hyper-sensitive and almost superhuman treatment.Facebook is applying AI to decode brain signals as a first step to creating a silent speech interface. The company funded research to develop machine-learning algorithms that translate brain activity into speech, revealing in a study published in *Nature* on July 30, 2019 that when a word or phrase is thought about by a respondent, it can be displayed instantly as text on a computer screen.

The study is led by a team of researchers at University of California, San Francisco (UCSF), and the findings mark a significant step in non-verbal communication.



References: https://www.jwtintelligence.com/2019/08/ai-doctors/

SMOOTH-TALKING AI ASSISTANTS

Ijjurotula Yaswanth
16A31A05A7

New techniques that capture semantic relationships between words are making machines better at understanding natural language.

We're used to AI assistants—Alexa playing music in the living room, Siri setting alarms on your phone—but they haven't really lived up to their alleged smarts. They were supposed to have simplified our lives, but they've barely made a dent. They recognize only a narrow range of directives and are easily tripped up by deviations.

But some recent advances are about to expand your digital assistant's repertoire. In June 2018, researchers at OpenAI developed a technique that trains an AI on unlabeled text to avoid the expense and time of categorizing and tagging all the data manually. A few months later, a team at Google unveiled a system called BERT that learned how to predict missing words by studying millions of sentences. In a multiple-choice test, it did as well as humans at filling in gaps.

These improvements, coupled with better speech synthesis, are letting us move from giving AI assistants simple commands to having conversations with them. They'll be able to deal with daily minutiae like taking meeting notes, finding information, or shopping online.

Some are already here. Google Duplex, the eerily human-like upgrade of Google Assistant, can pick up your calls to screen for spammers and telemarketers. It can also make calls for you to schedule restaurant reservations or salon appointments.

In China, consumers are getting used to Alibaba's AliMe, which coordinates package deliveries over the phone and haggles about the price of goods over chat.

AI programs have gotten better at figuring out what you want, they still can't understand a sentence. Lines are scripted or generated statistically, reflecting how hard it is to imbue machines with true language understanding. Once we cross that hurdle, we'll see yet another evolution, perhaps from logistics coordinator to babysitter, teacher—or even friend.

This advancement in AI will be made available in 1-2 years.

Why it matters: AI assistants can now perform conversation-based tasks like booking a restaurant reservation or coordinating a package drop-off rather than just obey simple commands.

Reference: https://fintechjuice.com/smooth-talking-ai-assistants/

Virtual reality Letting Radiologists Navigate Catheters Through Patient's Blood Vessels:

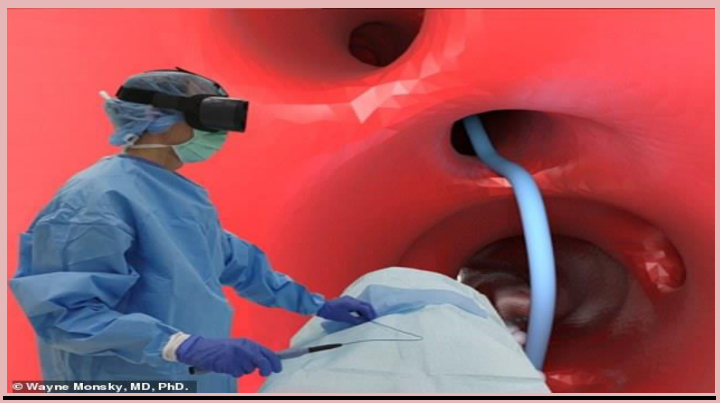
Gorla Kiran Kumar
16A31A05A4

Recent research has utilized VR to let physicians see the inside of patient's blood vessels in 3D during operation. The study, conducted by the University of Washington Medical Center, demonstrated how a catheter with electromagnetic sensors could be steered by the physician using this VR technology.

Radiologists use imaging techniques to maneuver catheters through blood vessels to precisely treat patients with blood clots, stokes, cancer, and various other conditions. These non-invasive procedures must be done with great care, typically requiring X-ray imaging to properly navigate surgical equipment during the procedure. This imaging method has been effective; however, it also exposes patients to harmful radiation.

Scientists from the University of Washington have designed a new catheter that not only eliminates this radiation exposure but offers a more precise treatment method as well. Using this VR platform, the average time it took physicians to reach targeted blood vessels was much lower than in the traditional X-ray method, known as fluoroscopy.

The VR software included the 3D holographic display of the patient's vasculature that the radiologists saw as they navigated through the corresponding 3D-print model. This holographic recreation was made through a University of Washington business incubator program that fostered the development of Pyrus Medical, an endovascular care startup.



The researchers generated a 3D printed model and a holographic image of a patient's abdominal and pelvic blood vessels and had the group of radiologists guide the new catheters throughout the 3D printed model.

Reference: https://www.docwirenews.com/docwire-pick/vr-letting-radiologists-navigate-catheters-through-patients-blood-vessels/

,

Augmented Reality and Virtual Reality

Kanchi Manikanta
17A35A0503

Augmented Reality

Augmented reality (AR) is one of the biggest technology trends right now, and it's going to get bigger as AR ready smartphones and other devices become more accessible around the world. AR let us see the real-life environment right in front of us – trees swaying in the park, dogs chasing balls, kids playing soccer – with a digital augmentation overlaid on it. For example, a pterodactyl might be seen landing in the trees, the dogs could be mingling with their cartoon counterparts, and the kids could be seen kicking past an alien spacecraft on their way to score a goal.

Fig 1

With advance in AR technology, these examples are not that different from what might already available for your smartphone. Augmented reality is, in fact, readily available and being used in a myriad of ways including as Snapchat lenses, in apps that help you find your car in a crowded parking lot, and in variety of shopping apps that let you try on clothes without even leaving home.

Perhaps, the most famous example of AR technology is the mobile app Pokemon Go, which was released in 2016 and quickly became an inescapable sensation. In the game, players locate and capture Pokemon characters that pop up in the real world – on your sidewalk, in a fountain, even in your own bathroom.

Games aside, there are many uses for AR in our everyday lives as there are Pikachu on the loose of Pokemon Go. Here are just a few examples:

- Enhanced navigation systems use augmented reality to superimpose a route over the live view of the road.
- During football games, broadcasters use AR to draw lines on the field to illustrate and analyze plays.
- Furniture and housewares giant IKEA offers an AR app (called IKEA Place) that lets you see how a piece of furniture will look and fit in your space.
- Military fighter pilots see an AR projection of their altitude, speed, and other data on their helmet visor, which means they don't need to waste focus by glancing down to see them.
- Neurosurgeons sometimes use an AR projection of a 3-D brain to aid them in surgeries.
- At historical sites like Pompeii in Italy, AR can project views of ancient civilizations over today's ruins, bringing the past to life.

- Ground crew at Singapore's airport wear AR glasses to see information about cargo containers, speeding up loading times.

Virtual Reality

The definition of virtual reality comes, naturally, from the definition for both 'virtual' and 'reality.' The definition of 'virtual' is near and reality is what we experience as human beings. So the term 'virtual reality' basically means 'near-reality.' This could, of course, mean anything but it actually refers to a specific type of reality emulation.

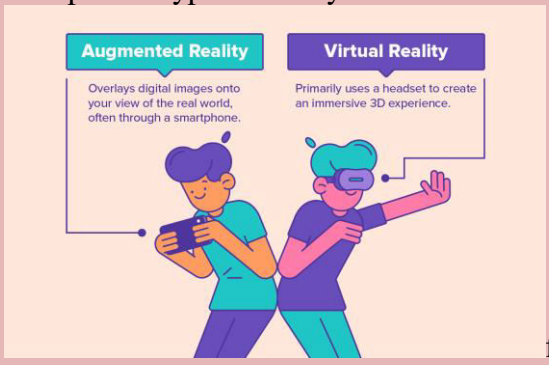


fig 2

VR is the creation of a virtual environment presented to our senses in such a way that we experience it as if we were really there. It uses a host of technologies to achieve this goal and is a technically complex feat that has to account for our perception and cognition. So, in summary, virtual reality entails presenting our senses with a computer generated virtual environment that we can explore in some fashion.

Virtual reality has many other, more serious, applications as well. There are a wide variety of applications for VR which include: Architecture, Medicine, Entertainment, Sport, The Arts etc. It can lead to new and exciting discoveries in these areas which impact upon our day to day lives. Wherever it is too dangerous, expensive or impractical to do something in reality, virtual reality is the answer.

VR ha often been used as a marketing buzzword for compelling, interactive video games or even 3D movies and television programs, none of which really count as VR because they don't immerse you either fully or partially in a virtual world. Search for virtual reality in your cellphone app store and you'll find hundreds of hits, even though a tiny cellphone screen could never get anywhere near producing the convincing VR experience.

VR is literally a "dreamy escape" from reality. The key point to remember about VR is that it really isn't a fad or fantasy waiting in the wings to whistle people off to alternative worlds; it's a hard-edged practical technology that's been routinely used by scientists, doctors, dentists, engineers, architects, archaeologists, and the military for about the last 30 years.

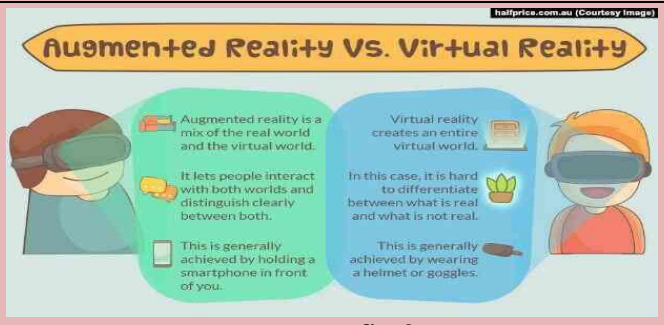


fig 3

Another, the Mixed Reality (MR) is the experience which combines elements of both AR and VR, real-world and digital objects interact. Mixed reality technology is just now starting to take off with Microsoft's HoloLens fig 3, one of the most notable early mixed reality apparatuses.

fig 4

References:

https://tech.fb.com/ar-vr/
https://research.fb.com/category/augmented-reality-virtual-reality/
https://www.augment.com/blog/virtual-reality-vs-augmented-reality/

RCS protocol

What is RCS?

RCS,expanded as Rich Communicattions Services,is a protocol that aims to replace SMS.It enables several services including group chats,videos,and file transfers without additional applications.

Vootla Lashya
16A31A0536

UNDERSTANDING THE RISK ASSOCIATED WITH RCS:

According to security experts,this protocol allows hackers to perform a number of cyber attacks,including the complete take over of the device

- Android devices are said to be more vulnerable to this attack because android messages,which is popular RCS client,does not validate the domains and certificates properly.
- The risks include caller ID spoofing,data interception and location

Authenciate using secure elements and implement strong authentication codes.

- Validate client directly and implement using a number of components.

REFERNCE:

https://youtu.be/2YuJxv4VTwIn tracking.
What can be done?

MIND READING COMPUTER

Presented this paper at BVC COLLEGE OF ENGINEERING.

G.S.C. Sirisha

People express their mental state including thoughts and desires all the times through facial expressions, vocal nuances and gestures. This is true even when they are interacting with machines. The ability to attribute mental states to others from their behavior and to use that knowledge to guide our own actions and predict those of others is known as theory of mind or mind reading. Existing human computers are mind blind, oblivious to the user‘s mental states and interactions. With a special camera, the computer observes a person‘s emotions through facial expressions. The computer does this by observing what the team calls ―feature points‖ –prominent features on the face—to measure movements of the head or facial features. In total, there are 24 feature points that the computer watches for and 20 movements, regardless of what‘s on a person‘s face. So far, the computer‘s database is full of actors‘ faces doing their best to express joy, sorrow, anger, confusion and other emotions.

The mind reading machine is a gadget which enables the computer to read the mind of human through their facial expressions. The main objective behind this gadget is to increase the effectiveness of the human interaction with the computer. This improves the output and allows running the application without any users input or response which means the computer does not have to wait for input from the user to run the application.

The mind reading actually involves measuring the volume and oxygen level of the blood around the subject‘s brain using the technology called functional near-infrared spectroscopy(FNIRS).The user wears a sort of futuristic headband that sends light in that spectrum into the tissues of the head where it is absorbed by active, blood filled tissues.

Users wear a futuristic looking headband to shine light on their foreheads and then performs a series of increasingly difficult tasks while the device reads what parts of the brain are absorbing the light. That info is then transferred to the computer and from there the computer can adjust it‘s interface and functions to each individual.

Nano Technology

Presented this paper at JNTUK, Kakinada Zeitgeist 2018.

K.PRIYA

16A31A0574

G.GOWTHAMI

16A31A0568

Nanotechnology is commonly considered to deal with particles in the size range <100 nm, and with the nanomaterial manufactured using nanoparticles. The approaches to the toxicology testing, and assessment of the human and environmental risks are undergoing rapid development. One risk assessment area of strong interest is the extent to which nanoparticle and nanomaterial toxicity can be extrapolated from existing data for particles and fibers.

The research and development of nanotechnology is very active globally, and nanotechnologies are already used in hundreds of products, including sunscreens, cosmetics, textiles, and sports equipment. Nanotechnology is also being developed for use in drug delivery, biosensors, and other biomedical applications. Further, nanotechnologies are also being developed for use in environmental applications, e.g., clean-up of environmental pollutants.Nanotechnology is the engineering of functional systems at a molecular scale obtained through the finely controlled manipulation of matter on atomic, molecular, and supra molecular scales. The earliest description referred to the so-called ―molecular‖ nanotechnology, which involves precisely manipulating atomic molecules to fabricate macro scale products.[1] Subsequently, the National Nanotechnology Initiative formally established a given size threshold for the matter manipulated: from 1 to 100 nm^2. Because of the ―atomic‖ size of the matter and the possibility of exponential growth as a field, nanotechnology has generated a new industrial revolution, progressing from passive nanostructures to productive nanosystems.

Presented this paper at JNTUK, Kakinada Zeitgeist 2018.

J.S.Sowmya
16A31A0570

J.L.S.D Kiranmayi
16A31A0572

GRID Computing

The concept of grid computing has acquired great popularity, even greater than the Web itself at its beginning. This concept has not only found its place with in numerous science projects (in medicine e.g.), but is also being used for various commercial applications. Grid computing is the collection of computer resources from multiple locations to reach a common goal. The grid can be thought of as a distributed system with non-interactive workloads that involve a large number of files. Grid Computing is used by Government and International Organizations, The military people ,Teachers and educators ,Businesses analysts. By providing transparent access to resources, work can be completed more quickly. Grids can grow seamlessly over time, allowing many thousands of processors to be integrated into one cluster.

Grid computing provides computing power where it is needed most, helping to better meet dynamically changing work loads . But coming to disadvantages For memory hungry applications that can't take advantage of MPI you may be forced to run on a large SMP. you may need to have a fast interconnect between computer resources (gigabit Ethernet at a minimum). some applications may need to be tweaked to take full advantage of the new model. In the constantly changing industry, we have many changing processes, technologies and terminologies. You need to be constantly updated since many processes are too similar to be distinct but they are distinct in their own way. One such topic of confusion is cloud computing and grid computing. Mainly, both Cloud Computing and Grid Computing are used to process tasks. However, grid computing is used in cloud computing but it is not a cloud or part of it. They both involve massive computer infrastructures and managing them. Both Cloud Computing and Grid Computing concepts have been developed for the purpose of distributed computing, that is, computing an element over a large area, literally on computers that are separated by some or the other means. All these systems can communicate with each other directly or by using some scheduling systems. Grid computing incorporates systems in different locations through WAN.

Presented this paper at JNTUK, Kakinada Zeitgeist 2018

V. Umadevi

16A31A0593

P.V.V.L.Prasanna

16A31A0585

Open Source Technology

Open source technology means that its source code is freely available for the public to view, edit and redistribute. Any type of software program can be open source including operating systems (e.g. Linux), databases (e.g. MySQL), application (e.g. Open Office), games and even programming languages (e.g. Python).

Open source software is identified by the type of license it is released under. These licenses include the Apache 2.0 license, the Microsoft Public License, and the GNU General Public License. While there are some variations, most open source licenses require that the source code be freely available and users are free to modify the source code and redistribute the software and derived works.

Non-open source software is called closed source a software which is hidden to prevent the user either viewing or changing the code (e.g. Microsoft Office). Some of the advantages of open source technology:

- Availability of source code
- Does not depend on vendor
- Quality and customizability is better
- Costs much less than the proprietary counterparts. Myths about open source:
- Open source software isn‘t reliable or supported
- Big companies don‘t use open source software
- There is no money to be made on free software.

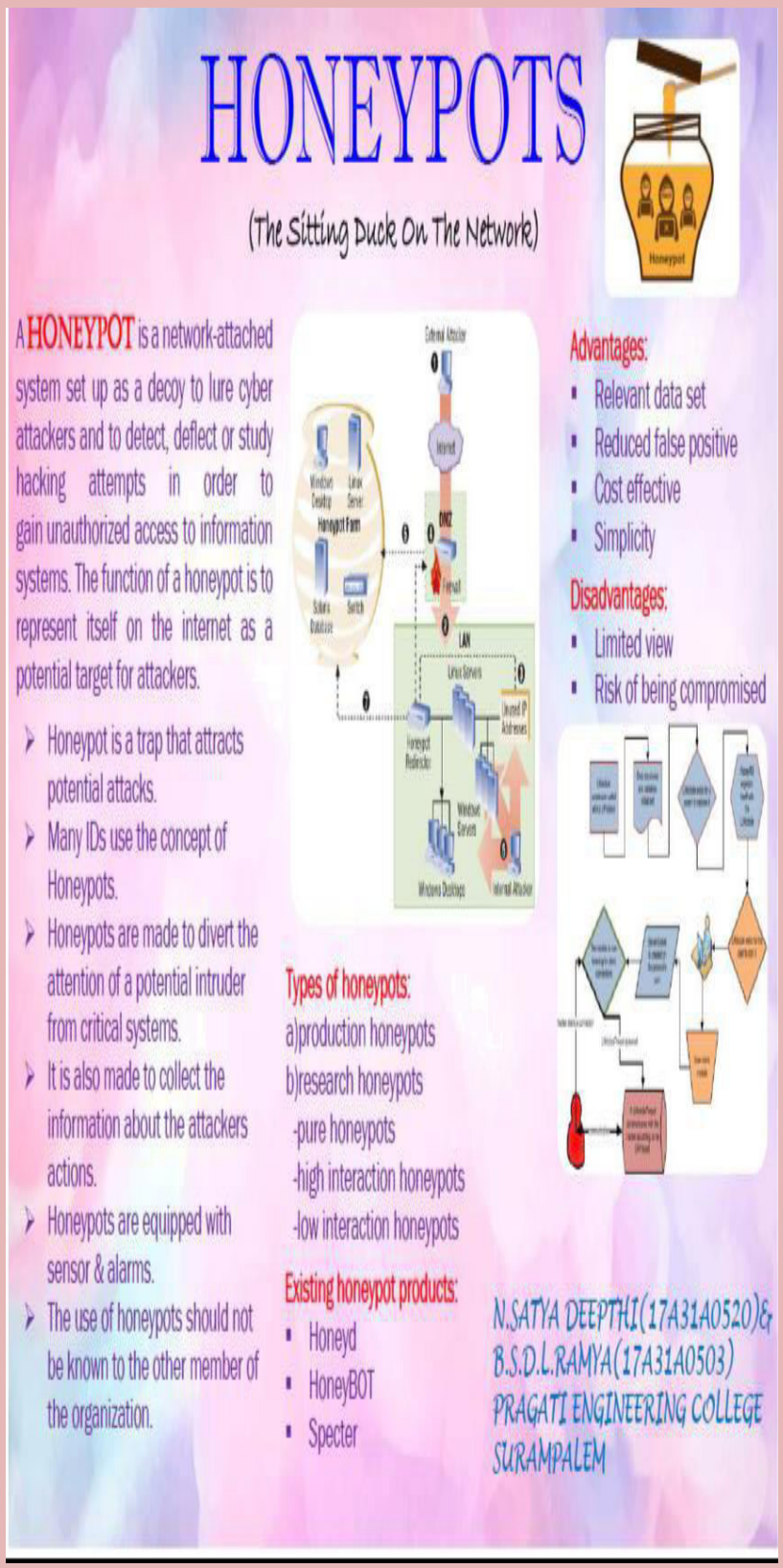
.

Presented a poster at JNTUK, kakinada on 2nd and 3rd march 2019

N. Satya Deepthi (17A31A0520)

B.S.D.L. Ramya (17A31A0503)

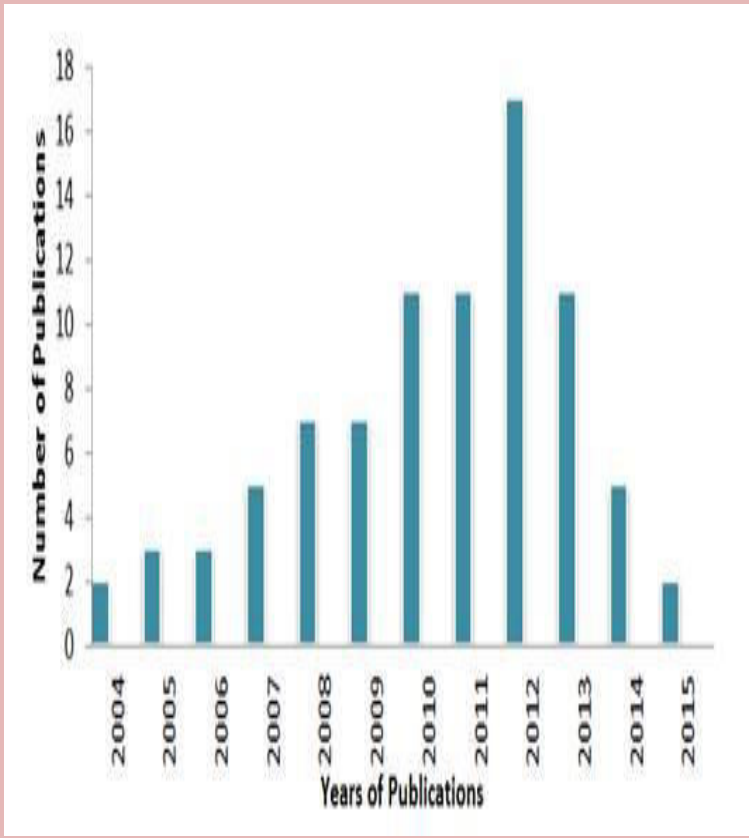
HONEYPOTS



Spam SMS filtering Using Machine Learning

K.ARUNA
17A31B0519
CSE

Problem Statement : short(Sms) isone of the well-known communication services in which a message sends electronically. The lessening in the cost of SMS benefits by telecom organizations has prompted the expanded utilization of SMS.



This ascent pulled in assailants, which have brought about SMS Spam problem. Spam messages include advertisements, free services, promotions, awards, etc. People are using the ubiquity of mobile phone devices is expanding day by day as they give a vast variety of services by reducing the cost of services. Short Message Service (SMS) is one of the broadly utilized communication service. In any case, this has prompted an expansion in mobile phones attacks like SMS Spam. In this problem, preliminary results are mentioned or explained herein based on Singapore based publically available datasets. This problem is further expanded using multiple background d Background Many SMS Spam messages detection

techniques are available these days to block spam messages and filtering spam messages. Few of which are mentioned below: - Gómez Hidalgoet. al. assessed a few Bayesian based classifiers to identify mobile phone spam. In this problem, the researchers proposed the first two surely understood SMS spam datasets: the Spanish (199 spam and 1,157 ham) and English (82 spam and 1,119 ham) test databases. They have tried on them various messages portrayal techniques and machine learning calculations, as far as viability. The outcomes show that Bayesian separating methods can be successfully utilized to group SMS spam. Hidalgo et al have analyzed that how Bayesian filtering technique can be used to detect SMS Spam. They have built two datasets one in English and another in Spanish. Their analysis shows that Bayesian filtering techniques that were earlier used in detecting email spam can also be used to block S Experimental Design The SMS Spam Collection v.1 is a public set of SMS (text) labeled messages that have been collected for mobile phone spam research. It has one dataset composed by 5,574 English, real and non-encoded messages, tagged as legitimate (ham) or spam. The collection is free for all pur, poses, and it is publicly available at: MS Spam. atasets.

Reference:
ttps://www.leadingindia.ai/downloads/projects/CS/cs_5.pdf

Credit Card Fraud Detection System

Boddani Satyasree,
17A31B0503,
3 rd year CSE-A

In proposed system, I present a behavior and Location Analysis (BLA).Which does not require fraud signatures and yet is able to detect frauds by considering a cardholder's spending habit. Card transaction processing sequence by the stochastic process of an BLA. The details of items purchased in Individual transactions are usually not known to any Fraud Detection System (FDS) running at the bank that issues credit cards to the cardholders. Hence, I feel that BLA is an ideal choice for addressing this problem. Another important advantage of the BLA -based approach is a drastic reduced.

The system analyses user credit card data for various characteristics. These characteristics include user country, usual spending procedures. Based upon previous data of that user the system recognizes unusual patterns in the payment procedure. So now the system may require the user to login again or even block the user for more than 3 invalid attempts.

Core Features:

- The system stores previous transaction patterns for each user.
- Based upon the user spending ability and even country, it calculates user's characteristics.
- More than 20 -30 %deviation of users transaction(spending history and operating country) is considered as an invalid attempt and system takes action.

References:http://towardsdatascience.com

Review of Predictive Location Tracking for Enhanced Mobile Intelligence Networks

AUTHORS:
L.Yamuna
Asst. Prof., CSE Dept. ,
Pragati Engineering College(A),
Surampalem,A.P.

This paper reviews the characteristic vulnerability in the development of mobiles in territories secured by remote systems and the issues caused to asset assignment due to this vulnerability. Beginning from this principal perception, it in this way perceived the advantages of having the capacity to conjecture the future areas of the portable hosts. This capacity could be utilized to act proactively, rather than responsively, to numerous circumstances. For example, having appraisals of future places of versatile hosts, the system could take suitable choices with respect to the data transfer capacity that will designate to the cells containing these areas. Furthermore, in remote specially appointed systems, where correspondence between hubs is performed on a store-and-forward reason for hubs not in closeness, the correspondence could be conceded until the hubs come nearer to one another, in this manner sparing system assets, as valuable data transfer capacity and storage room in the middle of the road hubs, decreasing parcel crashes.

Classification of Customer to Upgrade Profits in Retail Market with Deep Learning Methodology

AUTHORS:
I.GAYATHRI DEVI
Asst. Prof., CSE Dept. ,
Pragati Engineering College(A),
Surampalem,A.P.

Capital investment in retail sector and competition in the market has changed the style of marketing. At the same time the enhancements in the field of information technology provided an upper hand to the marketer to know the exact need, preference and perches trend of the customer. By knowing the actual need, preference and purchase trend of customers the marketer can make a future business plan to increase the sale and earn more profit. This paper provides a framework to the retail marketer to find the potential customer by analyzing the previous purchase history of the customer. This task can be accomplished by the use of data mining technique. In this paper we have used k-mean clustering algorithm and Naive Bayes‟ classifier for in identifying potential customer for a particular section of products of the retailer.

AUTHORS:
Manas Kumar Yogi
Asst. Prof., CSE Dept. ,
Pragati Engineering College(A),
Surampalem,A.P.

Wireless Sensor Networks

wireless sensor networks (WSNs) containing small, control obliged hubs are picking up fame because of their potential for use in a wide assortment of situations like observing of ecological traits, interruption identification, and different military and regular citizen applications. While the detecting targets of these situations are one of a kind and application-subordinate, a typical execution criteria for remote sensor systems is delaying network lifetime while fulfilling inclusion and network in the sending area. Security is another essential execution parameter in remote sensor systems, where antagonistic and remote situations present different sorts of dangers to dependable system operation. In this paper, we take a gander at the issues of security and vitality effectiveness and extraordinary definitions of these issues dependent on the methodology of amusement hypothesis. The potential applicability of WSNs to interloper location conditions additionally fits diversion theoretic formulation of these situations, where interest avoidance recreations give a significant structure to display location, following and observation applications. The appropriateness of utilizing amusement hypothesis to examine security and vitality productivity issues furthermore, interest avoidance situations utilizing WSNs originates from the idea of key communications between hubs. Methodologies from amusement hypothesis can be utilized to upgrade hub level too as system wide execution by abusing the circulated basic leadership capacities of WSNs. The utilization of amusement hypothesis has multiplied, with a wide scope of uses in wireless sensor organizing. In the wake of this expansion, we overview the utilization of diversion theoretic ways to deal with detail issues identified with security and vitality productivity in remote sensor systems.

AUTHORS:
M.V.Rajesh
Assoc. Prof., CSE Dept. ,
Pragati Engineering College(A),
Surampalem,A.P.

A Review of Conflict and Co-operational Approaches between Intelligent and Rational Detecting Stress Based on Social Interactions in Social Networks

Mental pressure is undermining individuals' wellbeing. It is non-paltry to identify pressure convenient for proactive consideration. With the fame of web based life, individuals are utilized to share their day by day exercises and associate with companions via web-based networking media stages, making it practical to use online informal organization information for stress identification. We find that clients stress state is firmly identified with that of his/her companions in internet based life, and we utilize an expansive scale dataset from genuine social stages to efficiently think about the relationship of clients' pressure states and social cooperations. We initially characterize a assistance of list we fabricate a site for the clients to recognize their pressure rate level and can check other related exercises.

AUTHORS:
Dr. M.Radhika Mani
Prof., CSE Dept. ,
Pragati Engineering College(A),
Surampalem,A.P.

An Efficient Key-Exposure Approach for Improving Security in Cloud Storage

The security issue of key presentation is one of the serious issues in distributed storage evaluating. To beat this issue, at first the key-introduction flexibility conspire had been proposed. Anyway in this plan, the information from the cloud can be unlawfully accomplished later than the key-presentation time frame utilizing a similar mystery key cap had been accommodated evaluating the cloud information. A creative world view called solid key-presentation strong evaluating for secure distributed storage which permits to set a specific time span for the key introduction. This jelly the security of the cloud prior as well as later than the key introduction time frame. The security verification and test results show that our proposed plan accomplishes anticipated security without influencing its proficiency.

AUTHORS:
Y. Jnapika
Asst. Prof,, CSE Dept. ,
Pragati Engineering College(A),
Surampalem,A.P.

Signification Permission Identification Method for Malware Detection System
A Review of Hybrid Exploratory Testing Techniques

Wildcat testing contains a mess of strategy related to it. It is a decent combination of structured thinking and race exploration that may be terribly powerful for locating bugs and substantiate correctness. This paper shows however the wildcat testing mentality is often combined with additional ancient scenario-based and scripted testing. This hybrid technique relaxes a lot of the rigidity unremarkably related to scripting and makes smart use of the wildcat testing steering bestowed. It additionally permits groups that square measure heavily unconditional in existing scripts to feature wildcat testing to their arsenal. Ancient state of affairs testing is incredibly seemingly to be a well-known idea for the reader. Several testers write or follow some type of script or end-to-end state of affairs once they perform manual testing. State of affairs testing is well-liked as a result of it lends confidence that the merchandise can faithfully perform the state of affairs for actual users. The additional the state of affairs reflects expected usage, the additional such confidence is gained. The additional part that wildcat testing lends to the current method is to inject variation into the state of affairs in order that a wider swath of the merchandise gets tested. Users can't be unnatural to merely execute the software package the manner we have a tendency to intend, therefore our testing ought to expand to hide these extra state of affairs variants.

AI AND DEEP LEARNING RESEARCH GROUP

Pragati Engineering College (Autonomous) is now Zonal Lead for leadingindia.ai – A national wide AI Skilling and Research Initiative

Objective

Objective of the leadingindia.ai initiative is making Deep Learning and AI skills mainstream in India to fulfill trilateral needs of entrepreneurship, Industry academia partnership and application-inspired Engineering Research

Head of the Research Group: **Dr. S Rao Chintalapudi, Associate Professor, Department of CSE**

Research Group Members:

- Prof. S V Ramana Murthy Professor,Department of CSE
- Dr. M. Radhika Mani Head &Professor,Department of CSE
- Mrs. D. Sirisha Head & Associate Professor,Department of IT
- Mr. M V Rajesh Associate Professor,Department of CSE
- Mrs. Y. Jnapika Assistant Professor,Department of CSE

Name of the AI Students Club: **Future Now**
Name of the Student Ambassador: **Ms. Hyndhavi Kona**
AI Skilling Target (By the end of 31st March 2020) : **2000**
AI Skilling Achieved (By the end of 31st August 2019) : **1013**
For more details follow this link: https://www.leadingindia.ai/zonalleaddetails/71
Facebook Link: https://www.facebook.com/Pragati-AI-and-Deep-Learning-Research-Group-369148973668263/
Linkedin Link: https://www.linkedin.com/company/pragati-ai-and-deep-learning-research-group/
Twitter Link: https://twitter.com/AiPragati
Instagram Link: https://www.instagram.com/pragati_ai_dl_researchgroup/
Special Web Page to be added on your Institution Web site (May be linked to leadingindia.ai) Give the link here : https://pragati.ac.in/research-and-development-cell/ai-and-deep-learning-research-group/

Contact Us:

Department Of Computer Science & Engineering

Pragati Engineering College
1-378, ADB Road,Surampalem,
Near Kakinada,East Godavari District,
Andhra Pradesh,India-533437.
Call : +91 7330826667, 08852 252233
Email : pragati@pragati.ac.in

Contact through E-mail

Principal
principal@pragati.ac.in
pragati@pragati.ac.in
Hod
cse_hod@pragati.ac.in
Alumni
oic_alumni@pragati.ac.in
Examinations
oic_exams@pragati.ac.in
T & P
tpo@pragati.ac.in
R & D
deanrnd@pragati.ac.in
Career Guidance
oic_cgc@pragati.ac.in
For Educational verifications
educationalverification@pragati.ac.in