KARMAVEER BHAURAO PATIL COLLEGE OF ENGINEERING, SATARA

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

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(Accredited by NAAC with "B++" grade)

1

ARTICLE ON : GRAPHICAL PASSWORD TO AVOID SHOULDER SUFFERING

ABSTRACT

In this method user will upload image from his /her personal gallery / directory for password selection and images uploaded by user will not be visible to other user. Graphical password is used as an alternative to textual/ numerical /traditional alphanumerical password .

INTRODUCTION

In today's technologically advanced era , it is imperative that there exists a convenient method for securing data. Computer security depends largely on passwords in order to authenticate human users. Graphical password by segmentation of image is the most efficient way to provide better feature long with cheap cost. It is designed to make password more memorable and easier for people to use and it is less vulnerable to brute force attacks than a text based password.

DRAWBACKS OF EXISTING SYSTEM

Traditional alphanumeric passwords are text based these passwords are effortlessly hacked by hacker and these passwords are easily vulnerable to shoulder-suffering Brute force, Hidden camera, and spyware attacks. Shoulder suffering means when user enters password attackers watches from behind, all of the explained techniques are easily vulnerable to shoulder suffering.

HOW TO OVERCOME DRAWBACKS OF EXISTING SYSTEM

Graphical passwords replaced the input in text password with another input containing images This implementation was developed from that " HUMANS BRAIN AND THEIR MEMOERY CAN REMENBER IMAGES BETTER THAN TEXT".

WORKING OF GRAPHICAL PASSWORD

- AT THE TIME OF REGISTRATIONN A USER CREATE GRAPHICAL PASSWORD BY FIRST ENTERING THE (AT LEAST 5) PICTURES HE OR HER CHOOSEN.THE USER THEN SEVEERAL POINT –OF – INTEREST (POI) REGION IN PICTURE. EACH POI IS DESCRIBED BY A CIRCLE. FOR EVERY POI THE USER SELECTS A POINT THAT WOULD BE ASSOCIATED WITH THAT POI. IF THE USER DOES NOT CLICK THE EXACT POINT AFTER SELECTING A POI THEN AUTHENTICATION IS NOT VALID. GRAPHICAL PASSWORDS PROVIDES A VERY STRONG PASSWORD SPACE. IT PROVIDES MULTI-FACTOR AUTHENTICATION (GRAPHICAL , TEXT , POL-ORDER, POI –NUMBER) IN A FRIENDLY INTUTIVE SYSTEM.

ADVANTAGE/DISADVANTAGE

- 1.INEXPENSIVE AND CHEAP DEVELOPMENT COST
- 2.ITS NOT VULNERABLE TO DICTIONARY ATTACKS
- 3.REGISTRATION IS SLOW
- 4.BIOMATRIC IS EXPENSIVE

APPLICATION

- Banking system
- Electronic voting system
- Online polls
- Preventing cyber attacks

FUTURE SCOPE

WELL , YOU CAN BREAK IT DOWN AND LOOK AT IT FROM A MATHEMATICAL PERSPECTIVE. A GRAPHICAL IMAGE IS REALLY JUST A SET OF DATA BEING REPRESENTED IN A VISUAL FORMAT FOR US HUMANS . IT'S PROBABLY GOING TO BE SALTED AND HASHED TO BE KEPT SAFE ON THE AUTHENTICATING MACHINES, OTHER THAN THE FACT THAT THE INPUT METHOD MIGHT BE LITTLE DIFFERENT FROM TEXT PASSWORD.

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VAISHNAVI VIJAYSINH NALAWADE.

COMPUTER ENGINEERING DEPARTMENT

2

ARTICLE ON : VIRTUAL MACHINE IN OPERATING SYSTEM

HISTORY OF VIRTUAL MACHINE

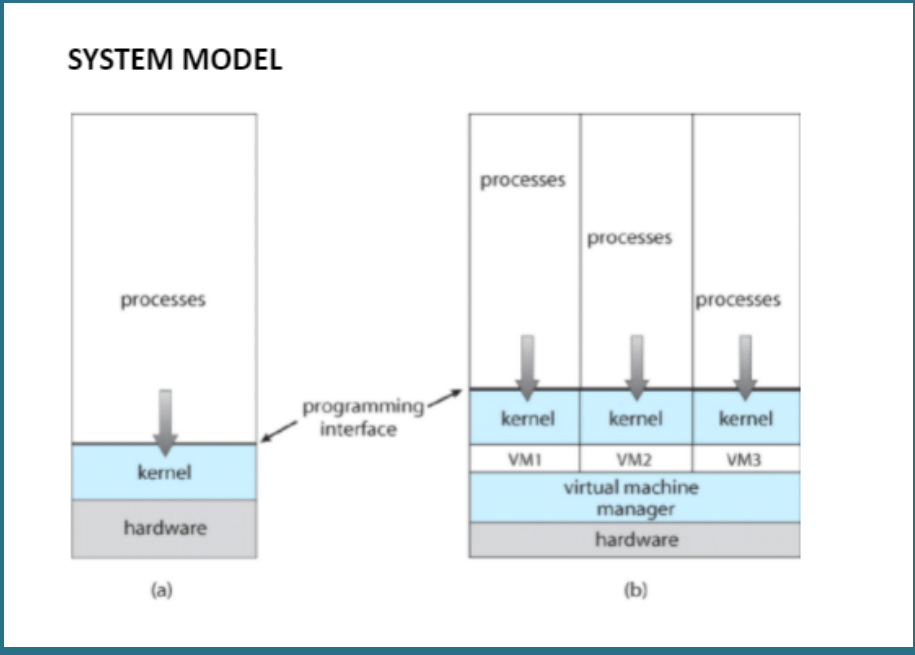
The first widely available virtual machine architecture was the CP-67/CMS . An important distinction was between using multiple virtual machines on one host system for time-sharing, as in M44/44X and CP-40, and using one virtual machine on a host system for prototyping, as in SIMMON. Emulators, with hardware emulation of earlier systems for compatibility, date back to the IBM System/360 in 1963, while the software emulation (then-called "simulation") predates it.

INTRODUCTION

A virtual machine (VM) is an operating system (OS) or application environment that is installed on software, which imitates dedicated hardware. The end user has the same experience on a VM as they would on dedicated hardware.
VIRTULIZATION is technology that lets you create useful IT services using resources that are traditionally bound to hardware. It allows you to use a physical machine's full capacity by distributing its capabilities among many users or environment.

WORKING OF VIRTUAL MACHINE

- VMs are made possible through virtualization technology. Virtualization uses software to simulate virtual hardware that allows multiple VMs to run on a single machine. The physical machine is known as the host while the VMs running on it are called guests.



This process is managed by software known as a hypervisor. The hypervisor is responsible for managing and provisioning resources—like memory and storage—from the host to guests. It also schedules operations in VMs so they don't overrun each other when using resources. VMs only work if there is a hypervisor to virtualize and distribute host resources.

TYPES OF VM

1.System Virtual Machine:
2. Process Virtual Machine

ADVANTAGES/DISADVANTAGES

1.Enhanced Data Security. ...
2.Improved IT Efficiency.
3. less efficient
4.slow the usability

EXAMPLES

Examples of virtualization platforms adapted to such hardware include- KVM, VMware Workstation, VMware Fusion, Hyper-V, Windows Virtual PC, Xen, Parallels Desktop for Mac, Oracle VM Server for SPARC, VirtualBox and Parallels Workstation.

APPLICATION

1. TRY NEW OPERATING SYSTEMS
2. TEST YOUR SOFTWARE
3. SET UP AN OFFICE QUICKLY
4. SMALL BIZ DISASTER RECOVERY
5. BUILD KID BOXES

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VAISHNAVI VIJAYSINH NALAWADE

(COMPUTER DEPARTMENT)

3 Asian countries tap satellite data to fight COVID-19

Artificial intelligence , Robots , Computer Vision , Infrared Sensing , Location Tracking , and Healthcare Innovations : these are few of the buzzwords trending for the past weeks . As countries still sweat to keep the rising cases in check, there are a few who have already flattened the curve. While western nations, from the USA to the UK are working on lockdown extension, investing heavily in research, debating on privacy laws, Asian

countries are responding to the crisis in a different manner. Besides using the benefits of advanced modern science and technology, other factors help in combating the grave scenario. Not every country necessarily plays by the same rules, yet it is imperative to look and ponder about the steps taken by them to mitigate the pandemic. After all, it is the "humans", the higher-order mammals who need to win the battle to restore normalcy and work for a sustained future.

Soon after WHO declared COVID-19 a global pandemic, Singapore prohibited travellers from mainland China in late January. Other incoming passengers had their body temperature scanned and immediately sent to quarantine to prevent transmission. They did the same in public places like schools, shopping malls, etc. Having survived the 2003 SARS scare, institutionalizing the lessons learned, the Singapore government already knew the benefits of funding the technological aspects to fight any future epidemic and pandemic instances. The open government data allowed detailed mapping of the outbreak and identify the hotspots. The country introduced an app called Trace Together and request its citizens to download them. The app used Bluetooth signals to identify people who've been exposed to patients infected with the coronavirus. Similarly, Bahrain rolled out an app called 'Be Aware'. It allows residents to track proximity to someone with COVID-19 based on GPS. Affected people were mandated to use this app while it was optional for rest.

Asia Pacific countries are leveraging geospatial information, digital solutions and artificial intelligence to enhance their response to the ongoing COVID-19 pandemic and to help meet the Sustainable Development Goals (SDGs), according to a new report.

"Data is now a strategic asset"

Tiziana Bonapace, UN Economic and Social Commission for Asia and the Pacific (UNESCAP)

The report, which is the first in a series of UNESCAP publications to assess progress towards implementing the Asia-Pacific Plan of Action on Space Applications for Sustainable Development (2018–2030), highlights a number of initiatives throughout the region.

Thailand, for instance, used space applications to monitor the local COVID-19 situation and visualise the impact of development policies. The Geo-Informatics and Space Technology Development Agency analysed reduced night-light images to monitor the impact of

lockdown measures. It also used satellite data to monitor nitrogen dioxide emissions and found that since the beginning of the year, most provinces in Thailand had fewer activities that caused emissions. All this data was integrated into a newly created dashboard that allows policymakers and others to monitor the pandemic, medical capacity, supplies, consumer goods and preventive and precautionary measures.

Last March, the Philippines' Department of Science and Technology – Philippine Council for Industry, Energy and Emerging Technology Research and Development (DOST PCIEERD) solicited proposals for projects that use geospatial information in response to COVID-19.

Now that the world is on the threshold of vaccine availability, the need for artificial intelligence geospatial information persists as countries plan for a shift towards a "new normal,"

This could mean the need to develop tools to ensure safety of public transport systems and offices as the economy is gradually being opened for business. We also need to develop intelligent systems to monitor places of commerce — systems that detect and report compliance to social distancing rules,"

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Yet , despite notable advances , significant challenges remain that prevent Asia Pacific countries from taking full advantage of digital solutions in their COVID 19 responses.

Space and geospatial information applications will continue to play an important role in countries COVID – 19 response . "Hotspot mapping , contact tracing and early warning systems are all capable of strengthening the preparedness for COVID – 19 as well as other disasters. These applications can also help in the recovery phase to build back better."

- Akshata Satish Chavan (SYCSE)

4

Everything as a Services

"Anything as a service" (XaaS)describe s a general category of service ls related to could computing and remote access. It recognizes tye vast number of products, tools,and technologies that are now delivered to users as a service over the internet

Everything+-as-a-Service
Hardware-as-a-service(HaaS)
Communication-as--a-Service
Desktop-as-a-Service
Security-as-a-aS-Service

Speeding new apps and business processes.
This model allows business to quickly adapt to changing market conditions with new apps or solutions. Using multitenant approaches, coluds services can provide much-nedded flexibility.

Tanvi Sanjay Yewale
Sy CSE

5 Recent Advancements In Iot

Ar IoT In The Healthcare Industry: With the boom in IoT healthcare industries can have major benefits. With wearable devices, consultants can very easily talk to patients and get doctors on your doorstep using some interactive mobile healthcare apps like HelpAround, Insight Optics and Medicine. Access to healthcare can be an easier and different process, even faster going forward. The field of healthcare that embraces IoT is highly encouraged.

Personalizing Retail:

IoT is going to be present everywhere, so how can it leave behind the retail shops and enrich your shopping experience? The introduction of IoT in retail will make this chain even more efficient. For example, you are well aware of the route map from home to a supermarket but what if you have a route map of the store which helps you in getting your stuff smoothly and saves a lot of time? Advancement in retail with IoT will bring a new era of shopping which will make it a better experience for customers.

Cloud Computing:

Cloud computing delivers computer services like storage and intelligence to provide a smooth resource. It is cost-efficient and secure, providing several kinds of policies to protect your data from threats. Cloud computing provides scale elasticity which means it offers the right amount of IT services. Cloud computing is one of the most significant security developments which will be the future of IoT data protection.

Computers with internet connectivity can sometimes be dangerous and downloads of spyware can have your personal information at stake. With cloud computing, smartphones, vehicles and wearable devices can hold several malware records.

Staying Aware:

IoT tech leaders developed companies and enterprises are currently working to build out the true implementation of the IoT techniques. According to new IoT trends, more of today's industries and businesses will look at the IoT as a magic wand to attract consumers, grow brands, and improve User Experiences. Similarly, manufacturers will be asked to produce more IoT devices to make them more comprehensive. Take an account of Gartner, for instance. The tech giant thinks that in 2020, 95% of electronics will be powered by IoT.

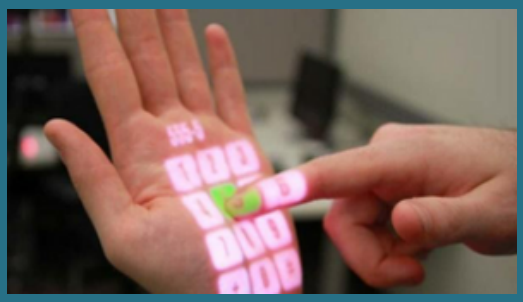
Final Word:

The Internet of Things is all set to amalgamate with other technologies to make lives easy and smart. Whether we talk about IoT's role in the finance industry or its integration in healthcare services, advancements in this technology will further bring great achievements in the whole technological ecosystem around the world. As we saw in this article, the Internet of Things (IoT) will bring the world closer and make it prosperous in every sense.

Babar Apeksha Navnath.
(SYCSE)

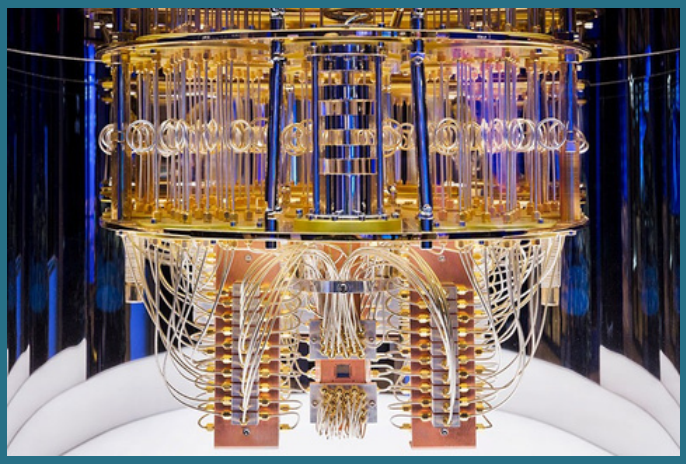
6 VIRTUAL KEYBOARD

- The first optical virtual keyboard (also known as projection keyboard) was invented and patented by IBM Engineers in 1992. In 2002, CANESTA developed a virtual keyboard using their proprietary “electronic perception technology”. Virtual Keyboard is just another example of today’s computer trend of ‘smaller and faster’. The new virtual keyboard technology uses sensor technology and artificial intelligence to users works on any surface as if it were a keyboard. In a virtual keyboard, camera tracks the finger movements of the typist to get the correct keystroke. The aim of the technology Is to develop an ‘Augmented Reality’ (AR) solution for a handheld device that enables the user to write text. Virtual keyboards can be connected to the computer either through Bluetooth or USB. It can be also used in 6th Sense Technology Device and even with 3D Glasses. Projection keyboards or virtual keyboard claim to provide the convenience of compactness with the advantage of a full blown QWERTY keyboard. The virtual keyboard is designed to protect your password from malicious “spyware” and “Trojan programs”. Use of virtual keyboard will reduce the risk of password theft.

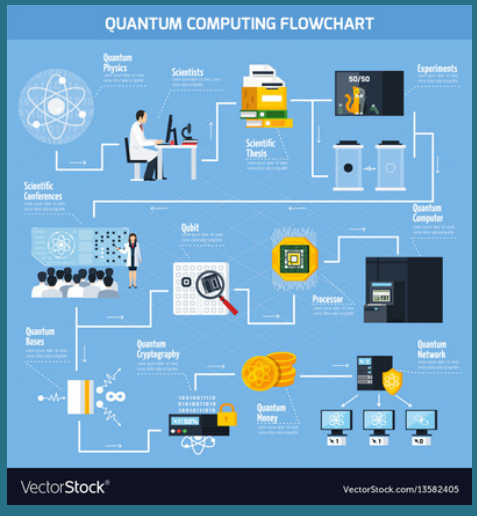


7 QUANTUM COMPUTING

Quantum computers perform calculations based on the probability of an object's state before it is measured - instead of just 1s or 0s - which means they have the potential to process exponentially more data compared to classical computers. In quantum computing, operations instead use the quantum state of an object to produce what's known as a qubit. These states are the undefined properties of an object before they've been detected, such as the spin of an electron or the polarisation of a photon.

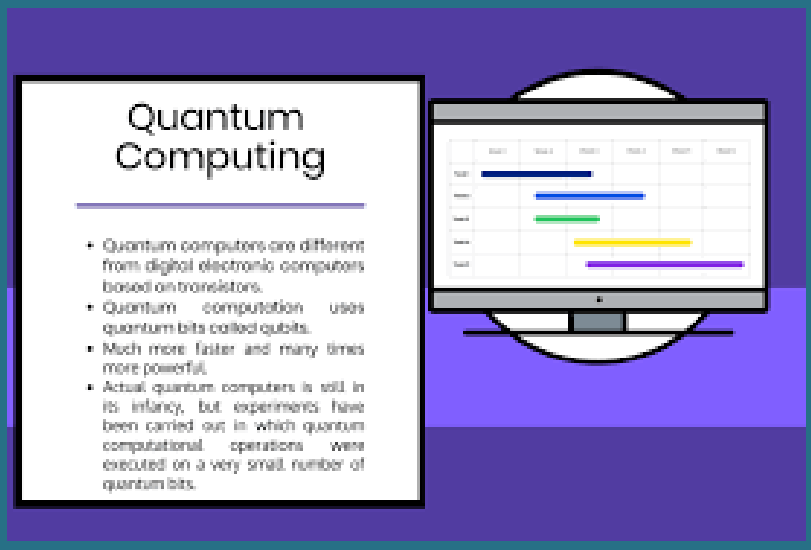


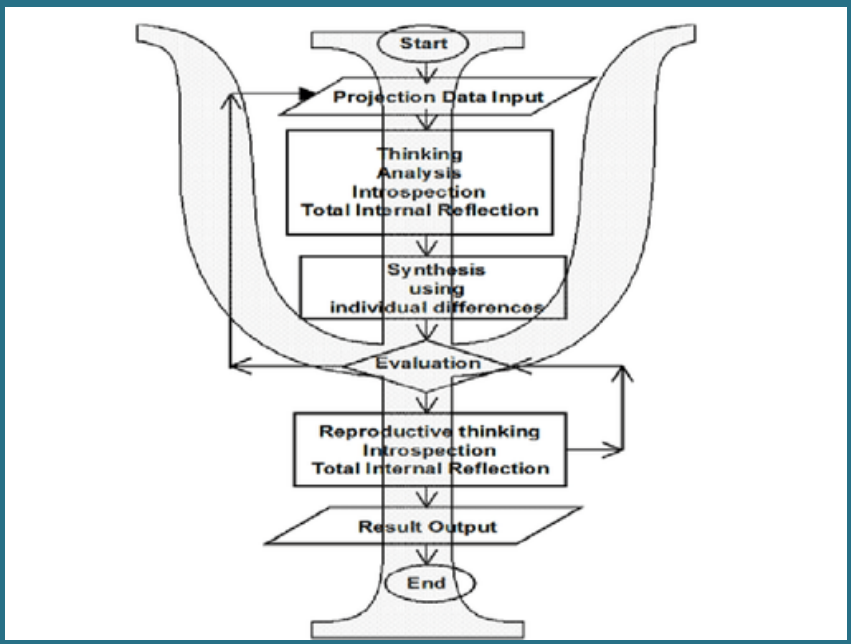
It is the exploitation of collective properties of quantum states, such as superposition and entanglement, to perform computation. The devices that perform quantum computations are known as quantum computers. There are several types of quantum computers (also known as quantum computing systems), including the quantum circuit model, quantum Turing machine, adiabatic quantum computer, one-way quantum computer, and various quantum cellular automata



Any computational problem that can be solved by a classical computer can also be solved by a quantum computer. Building a functional quantum computer requires holding an object in a superposition state long enough to carry out various processes on them.Unfortunately, once a superposition meets with materials that are part of a measured system, it loses its in-between state in what's known as decoherence and becomes a boring old classical bit.Devices need to be able to shield quantum states from decoherence, while still making them easy to read.Different processes are tackling this challenge from different angles, whether it's to use more robust quantum processes or to find better ways to check for errors.

The prevailing model of quantum computation describes the computation in terms of a network of quantum logic gates.[14] This model can be thought of as an abstract linear-algebraic generalization of a classical circuit. Since this circuit model obeys quantum mechanics, a quantum computer capable of efficiently running these circuits is believed to be physically realizable.





-Tejaswini Bhosale
SYCSE

8

DevSecOps

DevSecOps—short for development, security, and operations—automates the integration of security at every phase of the software development lifecycle, from initial design through integration, testing, deployment, and software delivery. DevSecOps represents a natural and necessary evolution in the way development organizations approach security. In the past, security was 'tacked on' to software at the end of the development cycle (almost as an afterthought) by a separate security team and was tested by a separate quality assurance (QA) team. This was manageable when software updates were released just once or twice a year. But as software developers adopted Agile and DevOps practices, aiming to reduce software development cycles to weeks or even days, the traditional 'tacked-on' approach to security created an unacceptable bottleneck.

DevSecOps integrates application and infrastructure security seamlessly into Agile and DevOps processes and tools. It addresses security issues as they emerge, when they're easier, faster, and less expensive to fix (and before they are put into production). Additionally, DevSecOps makes application and infrastructure security a shared responsibility of development, security, and IT operations teams, rather than the sole responsibility of a security silo. It enables “software, safer, sooner”—the DevSecOps motto– by automating the delivery of secure software without slowing the software development cycle.

The IT infrastructure landscape has undergone exponential changes over the past decade. The shift to agile cloud computing platforms, shared storage and data, and dynamic applications has brought huge benefits to organizations looking to thrive and grow through the use of advanced applications and services. However, while DevOps applications have stormed ahead in terms of speed, scale and functionality, they are often lacking in robust security and compliance. For this reason, DevSecOps was introduced into the software development lifecycle to bring development, operations and security together under one umbrella.

Hackers are always looking for the best ways to deploy malware and other exploits. Imagine if they were able to insert malware into an application during the build process, and that this malware was not discovered until the application had been distributed to thousands of customers. The damage to both the customer system and company reputation would be huge, especially in a world where bad news goes viral within moments. Making security an equal consideration alongside development and operations is a must for any organization involved in application development and distribution. When you integrate DevSecOps and DevOps, every developer and network administrator has security at the front of their mind when developing and deploying applications.

- Kadam. Apurva. Bharat.
SYCSE

9 Human Augmentation Technology

The advancements in modern technology have led to the advent of human augmentation, a technology that improves the way we do things and perceive our environment. Today, people can go about their normal lives instead of being limited by disabilities. And even non-physically impaired individuals can be made smarter, stronger, and faster thanks to augmentation. These possibilities and many more can be tied to a combination of augmented reality (AR), virtual reality (VR), and other modern technologies to form augmentation.

Human augmentation is also known as human 2.0. It is a field of research that involves the use of medicine or technologies to improve human productivity or capability. As such, this field centres on adding to the human body to enhance the things we can do. Augmentation is, therefore, an interactive digital extension of human capabilities. An example is the use of technologies to enhance the capabilities of people with special needs or to lengthen the active life of aging citizens.

Human augmentation can be defined as a field of study that focuses on methods and technologies that can be applied to improve the sensing, action, or cognitive abilities of humans. This improvement is attained through the use of sensing and actuation technologies, artificial intelligence (AI), and fusion & fission of information.

In the past, chemical substances ingested could improve selected abilities and the same was the case with installed implants.

Today, advancements in modern technology have created a wide variety of implants and other technologies. Either of these are known as human augmentation, and they can be categorized into different classes.

For starters, there are orthotics or limb devices that improve muscle capability. There are also devices and implants that help in the development of more enhanced sensory devices. Human augmentation can also be used with certain IT resources such as big data assets. These assets are data-connecting devices that connect the human body to external sources of information. And this information can be visual, text-based, or both. There are several examples of human augmentation and these are real-life use cases of this technology. There's also a high adoption of these applications due to their ability to make people smarter, stronger, tougher, and even more attractive.

HA will become increasingly relevant in the future as it is the binding agent between the unique skills of humans and machines. The winners of future wars will not be those with the most advanced technology, but those who can most effectively integrate the unique skills of both human and machine.

-Maryam Shaikh, SYCSE.

10 Pay attention to people, not to your phone.

In this 21 st century technology have give rise to new heights.We know the advantages of social media like how we can connect to each other within seconds also gain knowledge easily.But today I am presenting this article in front of you to know the dark side!
The point to be mentioned is really simple when we use apps like Facebook, Instagram technologist knowingly or unknowingly re-create the world for us in a different "WRONG" way

- They re-create our imagination
- They fight for our attention towards social media

Never before have a handful of tech designers(@Google, Facebook) had such control over the way billions of us think, act, and live our lives."
64% of the people who joined extremist groups on Facebook did so because the algorithms steered them there."
Internal Facebook report, 2018
If you are not paying for the product then you are the product.
Ok ! how does this actually work

- Whatever you watch on internet is being monitored and watched ,researched and recorded every single action you take.

2.Exactly which image you look at and for how many time it's called as engagement time
3.They know when people are lonley when they are depressed they basically they know what content to show you .
4There's a misconception being said that our data is being sold it's not in Facebook's interest about to give up data ,the main thing is what they do with that data
5They build AI models that predict our future behaviour and whoever has best models wins!(the real games start)
6 Every single data like your reel watch time which photo you watched for how many seconds and every single stuff is given to this business models.. This makes model more and more accurate
7-They dig down at deeper level inside the brain and implant things .So you'been programmed at a deeper level.
8-There's a team of engineers who's job is to hack people's psychology so they can get more growth more user sign ups and more engagement
We are zombies and they want us to look at ads so they can make money .
We are pointing this AI engines back at over self -reverse engineering method almost like Me (human) vs 1000xMe(super ai engines).

percentage of depression in teens using social media have increased in high rates
algorithms are not objective algorithm are optimised to some definition of success
As a human we have lost control over ourself over systemsAI-
-former Facebook employee
Internet has become COOL PLACE TO DO Rather than RIGHT THINGS TO DO
OK !!! Now what we can do!
  1 mass public pressure on these tech companies
2 we must have rules and regulation for the companies who are taking data from us.
3Turn off all the notifications from the apps you get you will not get manipulated by this
Notice that many big people in the tech industry don't give phones or social media to their children. Think about this..
Every part in this article every statement in article have been collected from the documentary" the social dilemma" I request everyone to please watch it the .Lastly
While (1) {
Cout<<" pls watch social dilema documentry"<<endl;
Cout<<"stop using social media*<<endl;
}

Article by -Ketan Mahesh Doshi.
SY-CSE 2020-21
If you like this article let me know here ketanmaheshdoshi@gmail.com

Interesting Computer Facts That Will Blow Your Mind

- IThe first hard drives available were even bigger than a commercial fridge
- On an average at least 6000 viruses are created every month. Scared? Simply switching to Linux OS should do the work because technically they do not get affected by viruses (almost).
- 9 out of 10 of the world's supercomputers run on Linux. So, now, don't you think, Linux is appealing enough to be tried out at least once by every consumer present.
- You can operate a computer without an Operating System. It sure is an interesting computer fact – only if you know how to do it.
- Scroll Lock key is the least utilized key on a keyboard. Many believe that it's completely useless.

Aditya Jadhav
SY CSE

- **RAYAT SHIKSHAN SANSTHA'S**
- **KARMVEER BHAURAO PATIL COLLEGE OF ENGINEERING , SATARA.**

(Accredited by NAAC with "B++" grade)

ARTICLE ON :

12 CYBER SECURITY

ABSTRACT

Cybersecurity encompasses a broad range of practices, tools and concepts related closely to those of information and operational technology (OT) security. Cybersecurity is distinctive in its inclusion of the offensive use of information technology to attack adversaries. Use of the term "cybersecurity" as a key challenge and a synonym for information security or IT security confuses customers and security practitioners, and obscures critical differences between these disciplines. Recommendation for security leaders is that they should use the term "cybersecurity" to designate only security practices related to the defensive actions involving or relying upon information technology and/or OT environments and systems..

INTRODUCTION

Cybersecurity has been practiced in military circles for over a decade. In recent years, the term has appeared in a variety of contexts, many of which have little or no relationship to the original meaning of the term. Misuse of the term obscures the significance of the practices that make cybersecurity a superset of information security, operational technology (OT) security and IT security practices related to digital assets.

With the understanding of the specific environment, cyber defence analyses the different threats possible to the given environment. It then helps in devising and driving the strategies necessary to counter the malicious attacks or threats. A wide range of different activities is involved in cyber defence for protecting the concerned entity as well as for the rapid response to a threat landscape

These could include reducing the appeal of the environment to the possible attackers, understanding the critical locations & sensitive information, enacting preventative controls
to ensure attacks would be expensive, attack detection capability and reaction and response capabilities.

DRAWBACKS OF EXISTING SYSTEM

Military terminology has migrated into non-military contexts in the same fashion that military technology has migrated into civilian enterprises (e.g. the Advanced Research Projects Agency Network (ARPANET) becoming the Internet). Other terms, such as advanced persistent threat (APT; originally a euphemism for network attacks supported by the government of the People's Republic of China) [2], have endured similar transitions. In many cases, a migration of terminology is beneficial, as it develops better specificity in discussions of technology operations

.

ADVANTAGE/DISADVANTAGE

· Protect networks and data from unauthorized access.
· Improved information security and business continuity management. · Improved stakeholder confidence in your information security arrangements. · Improved company credentials with the correct security controls in place.

APPLICATION

Bots and automated attacks
Zero-day exploit:
Ransomware:
Code injection...

FUTURE SCOPE

According to the predictions by experts, the scope of the Cyber Security market will become $170 billion industry by 2020. For the last 5 years, Cyber Security professionals have been making more salary than average IT professionals. And the average salary gap across the gap is 9% to state the least.

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13 5G AND ENHANCED CONNECTIVITY

INTRODUCTION

5G & Enhanced Connectivity are the buzzwords of present times. As technology evolves the term gets more defined. It is used for the purpose of describing the next generation of mobile telephony and other future applications that will shape the telecommunication world. This article looks closely at these two terms and compares them with their existing counterparts to understand the scope of improvements.

5G and how it is different from the previous generations

5G is the new and improved global wireless standard that is also referred to as the 5th generation mobile network. The 5G network and infrastructure are built in a way so as to provide peak data speeds in terms of multi-Gbps, massive connectivity and network capability, enhanced reliability, and incredibly low latency speeds.

5G Technology: The Future Of Connectivity

What is 5G technology? It isn't merely an advanced version of 4G, but a global platform that can automate and digitize almost everything we can think of. 5G comprises of a group of cutting-edge technologies and concepts that include but not limited to fiber, ultra-fast, MIMO based new radio, edge computing, network slicing, and virtualization to name a few.With digital technologies disrupting every vertical, telecom will have 5G to fall back on. 5G will play an enabling role in The 1st generation mobile network provided only analog voice, whereas the 4th generation mobile network offered mobile broadband. Compared to them, 5G offers the efficiency, power, and reliability to provide enhanced and speedy connectivity in domestic households. Additionally, it also offers smart solutions for companies in numerous industries, such as logistics, healthcare, transportation, agriculture, and more. realizing the full potential of Internet of Things (IoT), Internet, and other emerging technologies. 5G will be the foundation that will drive growth, and is expected to grow at 350% over the next 5 years.

Fig.1.1.

Applications of 5G for enhanced connectivity

- Reducing carbon emissions in our communities using smart energy, thus moving forward in smart city projects.
- Preventing on-road accidents by launching more connected vehicles on the road, which will continuously share data aimed

at avoiding any collisions.

- Delivering sensory experiences, engaging education, and immersive entertainment for the specially challenged people.
- Tackling global food shortage by using IoT in the agriculture sector and growing crops quicker and more efficiently.

How is 5G driven to achieve such high performance objectives?

The above applications are just the beginning of the list of 'smart solutions for companies'. But it is crucial to understand how a **5G** network and infrastructure works to help any enterprise achieve such high-performance objectives.

With its powerful applications in smart energy, telemedicine, and other smart solutions for companies, industries are increasingly trying to incorporate the 5G network and infrastructure in their business operations as well. Countries such as the US, China, and South Korea are already enjoying the massive enterprise benefits of 5G. So, this 5th generation mobile network and infrastructure will most likely be commonly available by the year 2022.

How will 5G impact end-users?

5G is likely to co-exist with 4G for some time as telecom operators slowly manage the shift to the much more upfront cost intensive 5G architecture. Once activated though, 5G can literally open up entire new vistas of value-driven use cases that simply weren't possible before. For example, if a transport company wants real-time analysis and processing of data from their vehicle that's on the move – they are much more likely to pay a premium for real-time, flawless connectivity than say, a home user.

For individual users, 5G will obviously mean much better quality on video calls, zero lags or stuttering on calls and streaming and flawless connectivity during large events, such as a conference or a multiplayer gaming scenario with a multitude of devices all feeding and processing large amounts of data at speeds faster than human perception.

The 5G Era

Mobile Internet traffic is estimated to grow over 40% a year by 2025. Over 75% of the Internet usage will be for video consumption and over 60% of the world's population will be online by 2025. Additionally, SIM connections are expected to more than double, with intelligent machines competing with humans for Internet bandwidth. This staggering number of mobile connections and mobile users are expected to generate reams of data, which will reveal valuable information about customer usage patterns, consumption rates, consumer behavior, etc.

14 ROBOTIC PROCESS AUTOMATION

Robotic Process Automation (RPA) is a software technology that makes it easy to build, deploy, and manage software robots that emulate Humans actions interacting with digital systems and software.
Just like people, software robots can do things like understand what's on a screen, complete the right keystrokes, navigate systems, identify and extract data, and perform a wide range of defined actions. But software robots can do it faster and more consistently than people, without the need to get up and stretch or take a coffee break.

Like AI and Machine Learning , Robotics Process Automation or RPA , is another technology that is automating jobs. RPA is the use of software to automate business processes such as interpreting applications , processing transactions , dealing with data ,and even replying to emails . RPA automates repetitive tasks that people used to do.
Robotic Process Automation (RPA) tool adoption has soared during the past couple of years. If anything, the pandemic gave organizations added motivation to automate in general - especially around mundane tasks, the type that are in RPA's sweet spot.Gartner recently reported that spending on RPA software will top $1.5 billion this year and continue to grow by double-digit percentage terms for the foreseeable future.
Key RPA trends for 2021and beyond :
1. Rise of intelligent process automation(IPA).
2. RPA as a service (RPAaaS) will become mainstream.
3. Proliferation of RPA across various sectors.
4. Gradual elimination of paperwork.
5. Blending of manual and digital efforts.
6. Importance of employee experiance(EX) and RPA.

Benifits of RPA is that - It is easy and quick deploy,Automate to lower cost, Increase profits , Boost productivity , Reduce the time and Human error , Better customer experience , Lower operational risk , Improved internal processes , It does not replace existing IT systems .

- Rutuja Jadhav
Sy cse

15 Interesting Computer Facts That Will Blow Your Mind

- The first ever hard disk drive was made in 1979, and could hold only 5MB of data.

- The fact that keyboard have ‘Q’ ‘W’ ‘E’ ‘R’ ‘T’ ‘Y’ types of button: When keyboard was invented, it had buttons in alphabetical order, as a result, the typing speed was too fast and the computer used to hang. So, to reduce the speed of a person, qwerty keyboard were invented.

- Konrad Zuse is the inventor of the first programmable computer in the world. He did it in 1936 and named the computer as Z1. Konrad Zuse

- All the domain names such as Google, Log In or Sign Up were free until 1995, but now everyone has to pay for every new domain name.

- A professional typist types fast and types great amount of words daily. If we measure this as distance, than it will become 12.6 miles a day for the fingers of the typist to cover each day.

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