



**VNR VIGNANA JYOTHI INSTITUTE OF
ENGINEERING AND TECHNOLOGY**



CZINE

MAGAZINE 2023



Come.. Simulate..Innovate

Department of Computer Science & Engineering

**Computer Society of India Student Branch
Chapter (CSI SBC, VNRVJIET)**



VNR VIGNANA JYOTHI INSTITUTE OF ENGINEERING AND TECHNOLOGY



Computer Society of India

ABOUT VNRVJIET

VNR Vignana Jyothi Institute of Engineering and Technology, an autonomous institute, sponsored by Vignana Jyothi Society began functioning from the academic year 1995-96. The society was started with an aspiration to provide purposeful and quality education. The institute is located on a campus of 7.33 Hectares as one of the best engineering collages in Hyderabad. VNRVJIET is always aiming to provide all the required facilities, best of infrastructure and is known to produce quality engineers by placing an emphasis on all-round development. VNRVJIET offers B.Tech, M.Tech and Polytechnic courses.

ABOUT CSI

CSI was formed in 1965 by few computer professionals. Today it has 72 chapters, 511 student chapters and more than 1,00,000 members in it, all over India. The wide spectrum of members is committed to advancement and practice of computer engineering and technology and related arts and scientists.

ABOUT CZINE

CSI of VNRVJIET launches a magazine called CZINE with all technical updates and other information that can benefit its members. This annual magazine covers complete details of various activities held during the academic year and also articles given by students.



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MESSAGES



Dr. C D Naidu (PRINCIPAL)

The efforts made by CSI in molding all the technical articles and best projects regarding the technological advancements into their annual newsletter CZINE, 2022 is noteworthy. I am confident that the CSI will make themselves stronger day by day, adding a new leaf to the grandeur of the college.



Dr. S. Nagini (Professor, HOD, CSE dept.)

It gives me great contentment to note that CSI is launching its Annual Newsletter CZINE. This magazine helps the students to bring out their inbred talents, to tweak their soft skills and to unveil the contemporary trends in this field to them. I wish the student chapter a grand success in all their future ventures.



Mr. N Sandeep Chaitanya (Faculty Co-ordinator)

CSI encourages students to channelize their potential in pursuit of excellence. CSI helps the students to polish themselves as an individual to work in unity and to sculpt their inner leader to take change of things in pursuit of a common goal.



Mr. Ch Sri Sumanth (Faculty Co-ordinator)

The talents, the skills and abilities of each student need to be identified, nurtured and encouraged so that he/she is able to reach greater heights and CSI is just the platform to do that. CSI inculcates the right amount of confidence in a student for them to achieve their targets and it is the most strengthening power in molding the future of students.



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MESSAGES



Mr. Yahwanth Sabbithi (Chairman CSI, 2022-23)

It is with my immense pleasure to say that I was a member of CSI. The exposure I received through CSI have always helped me figure out a way whenever I was pushed to the wall. I could say that the work I have done at CSI will always be a treasure to me as there was a lot that I was able to learn here.



Ms. Vaishnavi Sunkara (Joint Treasurer CSI, 2022-23)

Volunteering with CSI has transformed me both personally and professionally. I've had the opportunity to interact with diverse people, expanding my perspective on engineering and technology. Overall, my experience with CSI has been invaluable to my development.



Ms. Sushma Kunchala (President CSI, 2022-23)

The talents, the skills and abilities of each student need to be identified, nurtured and encouraged so that he/she is able to reach greater heights and CSI is just the platform to do that. CSI inculcates the right amount of confidence in a student for them to achieve their targets and it is the most strengthening power in molding the future of students.



Mr. Sushanth Manishetty (Director CSI, 2022-23)

I gained a lot of exposure through serving on the CSI committee. I made a lot of contacts with my seniors, juniors, faculty, and even some executives. All of these connections will be beneficial to me professionally. In addition to all the technical details, I personally have numerous memories from CSI that I will cherish forever.



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ACTIVITY REPORTS



Orientation 2021-2025 batch (domain)

9th June 2022

Orientation was successfully conducted on for 1st-year students of CSE-CYS, CSE-AIML, CSE-DS, CSE-IoT, and CSE-AIDS. The event was attended by Dr. Y Sagar sir and Mr. C Sumanth sir, who spoke about CSI. Alumni Mr. Varshith and Mr. Koushik shared their experiences and the benefits of being a member of CSI.



Resume Up

9th July 2022

Resume Up aimed at helping Students to build a resume. Moola Sai Sudha, Sure Pravalika, Apurva Gunnalle covered the fundamentals of building a professional resume, as well as insights on how to use LinkedIn, GitHub, and other coding platforms to increase professional exposure in the session.

Natural Cleansers ,Impacting for a better health and environment

9th August 2022

A Seminar was hosted where Mr. Swami Shailender shared his knowledge teaching about natural and traditional foods, fermentation, prebiotics, and probiotics.

FDP on AWS

22nd -27th August 2022,

Faculty Development Program on AWS, a one week National Level Program was organized. During this virtual event , speakers from Brain-o-Vision enlightened the faculty members about different services provided in AWS.

Architectural Designs- SOA and Microservices

9th September 2022

A guest lecture was organized where Mr. K Phani Shekar , an accomplished IT professional with 22 years of experience in the industry, delivered his lecture on Contemporary Technologies to students and also interacted with students about their career.

Masters Mantra

14th September,2022

Masters Mantra was hosted where the speaker, Mr. Jayasurya Pathapati, director of Raju's Study Abroad Services spread awareness about Masters abroad and the entire process of preparation and application.



Career Buzz

26th September 2022

Career Buzz was hosted for all third-year CSI membership holders. Mr Vardhan N , Ms K Sahithi , Mr Jeevan Y, and Mr Vishal M, talked about their placement journey, Interview experiences, facing and handling rejections, making wise choices and a few tips were delivered to the attendees.



Power BI

3rd November, 2022

A Guest Lecture on "Power BI" was organized. The speaker Mr Venkata Krishna Rao Gundapu , CEO of Skilscrolls Ed Tech and Consulting from VJ Hub, provided knowledge of the importance of POWERBI

VJ Hackathon

4th-5th November, 2022

The Department of Computer Science and Engineering in collaboration with the Computer Society of India (CSI SBC VNRVJiet) organized a National Level - VJ HACKATHON (Victory & Joy in Smart Innovations). The main motive of this hackathon is to encourage students who want to showcase their skills, come together and learn from each other's successes and failures, to boost inspiration, innovation, creativity, and productivity.



Optimization Techniques - Neural Networks

29th November, 2022

A Guest lecture was hosted about Optimization Techniques-Neural Networks by Dr. Shiv Ram Dubey, Assistant Professor, IIIT. The participants gained knowledge about optimization techniques with mathematical reasoning for deep learning.

KnowinGit

30th November, 2022

KnowinGit was hosted on 30th November, 2022. The session briefed about the concepts of Git and GitHub. The participants were awarded with certificates for the submission of the given assignment.



Seminar on "How to reap financial blessings tomorrow by sowing it today"

3rd february, 2023.

A "Seminar" was hosted in collaboration with CA SHUBHARAA MAHESHWARI chairperson, FLO Hyderabad & The committee on "How to reap financial blessings tomorrow by sowing it today" by CA Ram Prayaga, Founder Finance Box Pvt.Ltd for all third-year girl students and lady faculty members.

Workshop on Adobe Photoshop

Conducted a workshop on Adobe Photoshop by Ms B Neeha & Mr E Vinay Vardhan online, on 31st January, 2023.

Safer internet day session

3rd February 2023

An event was conducted on "Importance of Security and Privacy in the Hyper Connected World" on the eve of Safer Internet Day 2023 for third-year CSE-A & B by Dr. Sriram Birudavolu, CEO of Cyber Security Centre of Excellence.



VNR Designathon

3rd - 4th February 2023

A National Level – VNR DESIGN-A-THON (Collaborate Share Brainstorm Succeed) under the domains :Cyber Security, Industry 4.0, Gender diversity, Sustainability, was a 24 hour event .Dr. S. Nagini, Dr. P.V Siva Kumar, were the faculty coordinators for the event.

Orientation for 2022-2026 batch (DS,AIDS,CYS)

4th February 2023

An orientation was conducted for the freshman students of CSE-(CYS, DS, AIDS) to create awareness amongst the juniors about CSI with several guests and alumni present.



Orientation for 2022-2026 batch (CSE,CSBS)

7th February 2023

An orientation was conducted for the freshman students of CSE-(CSE,CSBS) to create awareness amongst the juniors about CSI VNRVJIET with several guests and alumni present.

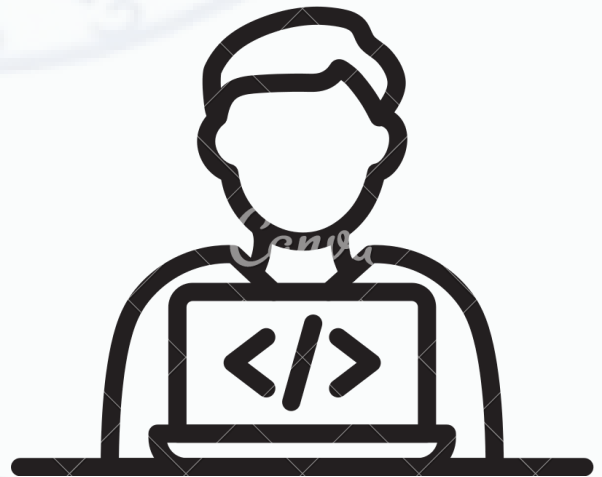




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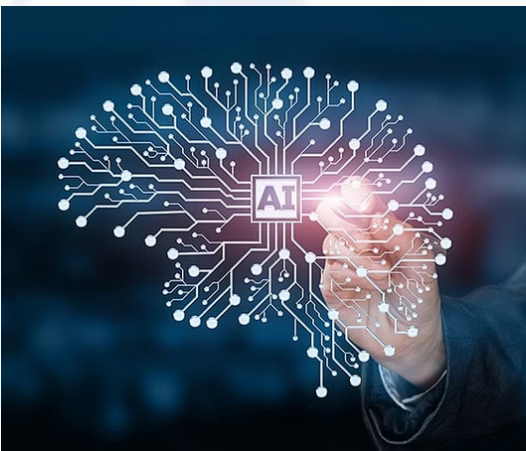


TECHNICAL REPORTS



Artificial Intelligence

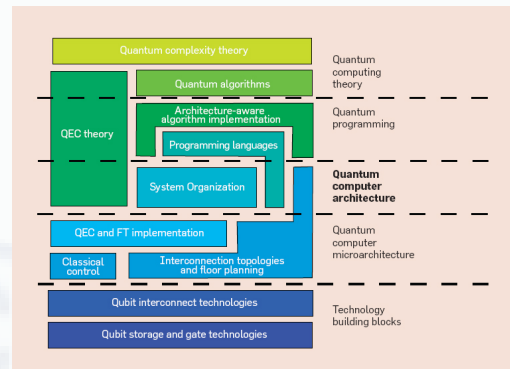
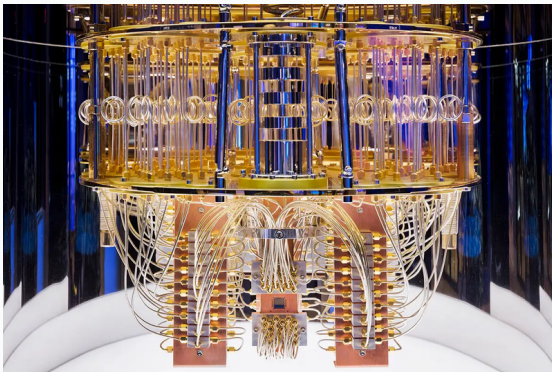
Artificial Intelligence (AI) is an umbrella term that refers to a wide range of technologies that enable machines to perform tasks that would typically require human intelligence. These technologies include machine learning, natural language processing, computer vision, and robotics, among others. One of the key benefits of AI is its ability to analyze large amounts of data quickly and accurately. In healthcare, AI can be used to analyze medical data to identify new treatments and improve patient outcomes. In finance, AI can be used to analyze financial data to identify trends and inform investment decisions. Another benefit of AI is its ability to automate tasks that would typically require human intervention. This includes tasks such as data entry, customer service, and even driving. In manufacturing. In customer service, AI-powered chatbots can handle customer inquiries and resolve issues without the need for human intervention. In entertainment industry, enabling new forms of immersive and interactive experiences. In gaming, AI can be used to create more realistic and dynamic game worlds.



However, AI also poses significant challenges and risks. One of the key concerns around AI is its potential impact on employment. As machines become increasingly capable of performing tasks that were previously performed by humans. Despite these challenges, AI is likely to continue to play an increasingly important role in our lives. As technology continues to advance, it will be important to ensure that it is used in a responsible and ethical manner.

-Podishetti Swapnil
21071A66G8
AIML-C 2nd year

Quantum computing



Add a lit Quantum computing is one of the most exciting and promising technologies of the 21st century. It has the potential to revolutionize many fields, from materials science and drug discovery to cryptography and artificial intelligence. At its core, quantum computing is based on the principles of quantum mechanics, which govern the behavior of subatomic particles such as electrons and photons.

The key idea behind quantum computing is the use of qubits, which are analogous to the bits used in classical computing. However, while classical bits can only be in one of two states (0 or 1), qubits can exist in multiple states simultaneously, a property known as superposition. This means that a quantum computer can perform many computations at once.

One of the key potential applications of quantum computing is in the field of materials science. Many materials, such as superconductors, are currently poorly understood, making it difficult to design new materials with specific properties. Despite its potential benefits, there are significant challenges that need to be overcome before quantum computing can become a practical technology. One of the key challenges is building qubits that are stable and reliable enough to perform useful computations.

Despite these challenges, there has been significant progress in the field of quantum computing in recent years. Many companies and research organizations are investing heavily in the development of this technology.

In conclusion, quantum computing is an exciting and promising technology that has the potential to revolutionize many fields. Its unique properties, such as superposition and entanglement, enable it to perform computations that are beyond the capabilities of classical computers.

Nanotechnology

Nanotechnology is a branch of science and engineering concerned with the design, manufacture, and application of structures, devices, and systems. Numerous uses for nanotechnology involve novel materials with entirely new characteristics and outcomes



when compared to the same materials produced at larger scales. This is caused by effects that are visible at that small scale but are not visible at larger scales, as well as the extremely high surface-to-volume ratio of nanoparticles compared to larger particles. These are some illustrations of how nanotechnology:

Nanotechnology in HealthCare and Medicine: Nanotechnology is widely used in the field of medicine as "nanomedicine". Nanotechnological devices are used to detect heart attacks, and nanochips are used to examine arterial plaque. Nanocarriers for chemotherapy, eye surgery etc. Nanoparticles for the therapeutic treatment of neurological disorders using drug delivery to the brain.

Nanotechnology in Fabrics: Fabric nanotechnology plays a significant role. Fabric properties can be enhanced when nanoparticles or nanofibers are used to make clothing and fabric, without noticeably adding weight, thickness, or stiffness.

Nanotechnology in Electronics: The application of nanotechnology to electronic components is known as "nanoelectronics". Nanoelectronics increases the capabilities of electronic devices, enhances the density of memory chips, and reduces power consumption and the size of transistors used in integrated circuits.

Nanotechnology in Energy Sources: In order to help meet the world's rising energy demands, nanotechnology is finding use in conventional energy sources and significantly improving alternative energy strategies. Through better catalysis, nanotechnology is increasing the efficiency of producing fuel from unprocessed petroleum materials.

-Harshini Reddy Aileni
21071A6667
AIML-B 2nd year

Internet Of Things



The term Internet of Things has become increasingly popular over the last five years and it looks like we will be hearing even more in future. Internet of Things (IoT) is the networking of physical objects that contain electronics embedded within their architecture to communicate and sense

interactions amongst each other or with respect to the external environment. IoT devices gather information and send it along to some central data server, where the information is processed, collated, distilled, and used to make a host of tasks easier to perform. Sensors, low power embedded systems, control units, cloud computing, networking communication are the key components in IoT. IoT's versatility makes it an attractive option for so many businesses, organizations, and government branches, that it doesn't make sense to ignore it. It has wide range of applications like:

Smart Homes : IoT devices can be controlled through a mobile app, allowing homeowners to monitor and control their home's environment from anywhere from lighting systems to security cameras and door locks.

Healthcare: IoT devices have the potential to revolutionize healthcare by enabling remote patient monitoring and telemedicine. Wearable devices can track vital signs and other health indicators.

Agriculture and Energy: In agriculture, IoT devices can be used to monitor soil conditions, weather patterns, crop growth, planting and harvesting cycles and improve crop yields and IoT devices can be used to monitor energy usage and optimize energy efficiency.

However, as with any new technology, IoT also presents significant challenges and risks. Security is a major concern, as connected devices can be vulnerable to hacking and data breaches. Despite these challenges, with the right precautions in place IoT has the potential to revolutionize the way we live, work, and interact with the world around us.

-G Chandra Shekar
21071A0518
CSE-A 2nd year

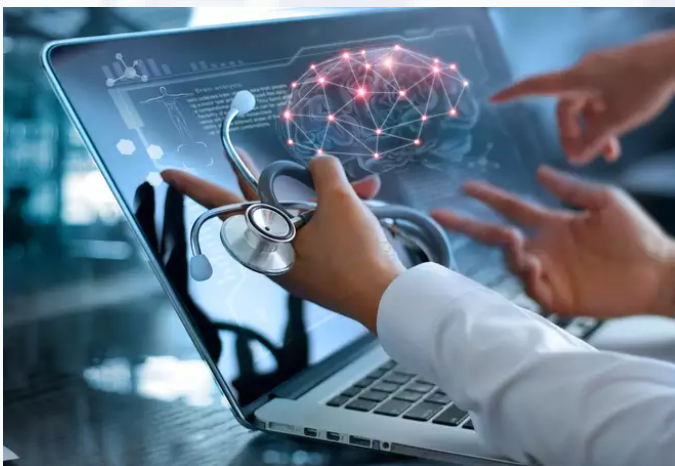
Digital Health

Be alert before your pulse drops!

Digital health is the use of electronic devices and software to improve our health system which include wearable fitness devices like smartwatches, health apps like Aarogya Setu to provide tips to be safe and also provide online doctor appointments, telemedicine, and electronic health records. Smart watches became increasingly popular due to their ability to track physical activity, monitor vital signs such as heart rate and blood pressure, and provide real-time feedback on health status.

Also there is telemedicine which allows healthcare providers to speak with patients remotely via a live video call, reducing time and travel expenses.

Digital health reduces inefficiencies, improves access, reduces costs, increases quality, and makes medicine more personalized for patients.



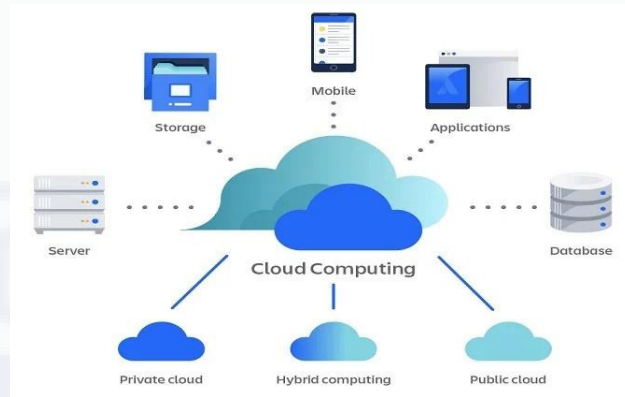
The main disadvantage is data security and privacy. There is a risk of data breaches and cyberattacks. Also, there could be potential for unequal access to technology..According to the WHO. “ Digital technologies are now integral to daily life, and the world’s population has never been more interconnected.”

As sunshine awaits us, the future of digital health is promising.

Beware of its correct usage. Let’s make India a digitally healthy country.

-N Hima Sameera
21071A6790
CS-DS-B 2nd year

Cloud Computing



Cloud computing is the on-demand delivery of IT resources over the Internet with pay-as-you-go pricing. Instead of buying, owning, and maintaining physical data centers and servers, you can access technology services, such as computing power, storage, and databases, on an as-needed basis from a cloud provider like Amazon Web Services (AWS).

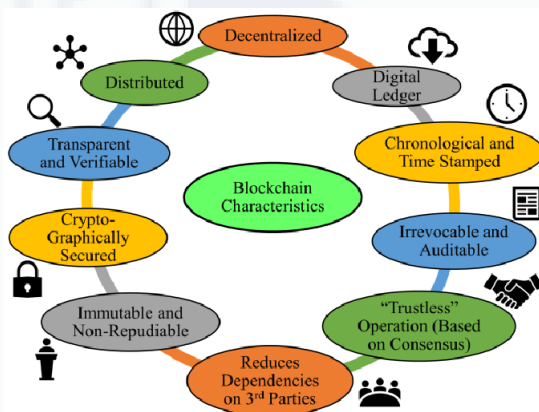
Current Cloud Computing is primarily based on proprietary data centers, where hundreds of thousands of dedicated servers are set up to host the cloud services. In addition to the huge number of dedicated servers deployed in data centers, there are billions of underutilized Personal Computers (PCs), usually used only for a few hours per day, owned by individuals and organizations worldwide. The vast untapped compute and storage capacities of the underutilized PCs can be consolidated as alternative cloud fabrics to provision broad cloud services, primarily infrastructure as a service. This approach, thus referred to as “no data center” approach, complements the data center based cloud provision model. Cost reductions are claimed by cloud providers. A public-cloud delivery model converts capital expenditures (e.g., buying servers) to operational expenditure. .

However, Cloud computing will affect a large part of the computer industry including Software companies, Internet service providers. Cloud computing makes it very easy for companies to provide their products to end-user without worrying about hardware configurations and other requirements of servers.

-G Santhosh
21071A6686
AIML-B 2nd year

Block Chain

Blockchain is a distributed digital ledger that enables secure, transparent, and tamper-proof transactions without the need for a central authority or middleman. It is a decentralized and immutable database that stores a continuously growing list of records called blocks. Each block contains a cryptographic hash of the previous block, a timestamp, and transaction data. It is a distributed data processing protocol for retaining a public distributed ledger in a peer-to-peer (P2P) network. Transaction data is recorded in blocks, and these blocks form a linked list (i.e., chain) of blocks. Each node in the network stores and maintains an entire copy of the ledger without requiring a central authority. In blockchain-based cryptocurrencies, each block contains the hash value of the previous block, making it hard to manipulate the transactions within. Normally, a consensus protocol is used to guarantee the data integrity among the nodes of the blockchain P2P network. There are several different consensus protocols used in different types of blockchains.

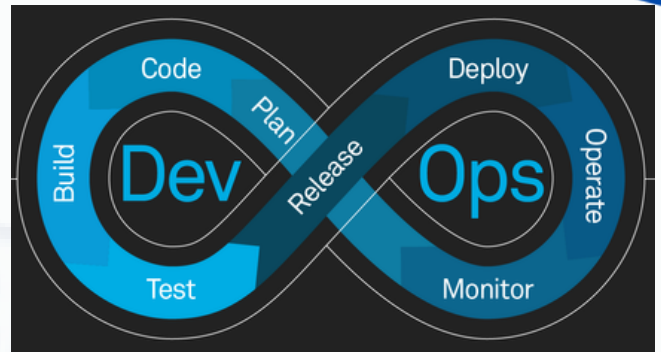


The unique feature of blockchain technology is its ability to ensure trust and transparency in a network where multiple parties can participate in a transaction without the need for a third party to validate the transaction. Transactions are verified and recorded by a network of nodes, and once a transaction is recorded on the blockchain, it cannot be altered or deleted. Therefore, blockchain technology creates a permanent and immutable record of every transaction.

-G Santhosh
21071A6686
AIML-B 2nd year

Dev-Ops

DevOps is a combination of software development (dev) and operations (ops). It is defined as a software engineering methodology that aims to integrate the work of development teams and operations teams by facilitating a culture



of collaboration and shared responsibility. Coding and scripting are two of the most important skills for anyone working in DevOps. DevOps engineers use the JavaScript scripting language to create interactive. The lifecycle of DevOps is designed to create, test, use, and improve software products. We break DevOps into five main areas: automation, cloud-Native, culture, security, and observability. We break DevOps into five main areas: automation, cloud native, culture, security, and observability. The DevOps methodology comprises four key principles that guide the effectiveness and efficiency of application development and deployment. These principles, listed below, centre on the best aspects of modern software development.

- Automation of the software development lifecycle. This includes automating testing, builds, releases, the provisioning of development environments, and other manual tasks that can slow down or introduce human error into the software delivery process.
- Collaboration and communication. A good DevOps team has automation, but a great DevOps team also has effective collaboration and communication.
- Continuous improvement and minimization of waste. From automating repetitive tasks to watching performance metrics for ways to reduce release times or mean-time-to-recovery, high performing DevOps teams are regularly looking for areas that could be improved.
- Hyperfocus on user needs with short feedback loops. Through automation, improved communication and collaboration, and continuous improvement, DevOps teams can take a moment and focus on what real users really want and how to give it to them.

-Hima Poojitha Lanka
21071A66A0
AIML-B 2nd year

Data Science

Data science is the study of data to extract meaningful insights for business. It is a multidisciplinary approach that combines principles and practices from the fields of engineering to analyze large amounts of data.

Data science enables companies to efficiently understand gigantic data from multiple sources and derive valuable insights to make smarter data-driven decisions.

Data science is widely used in various industry domains, including marketing, healthcare, finance, banking, policy work, and more.

Data science can be used to collect and share health information with the public, monitor and alter operations in sectors like clean energy, logistics, and communications, and build smart cities that use public resources more effectively, better manage traffic, and mitigate the effects of climate change.

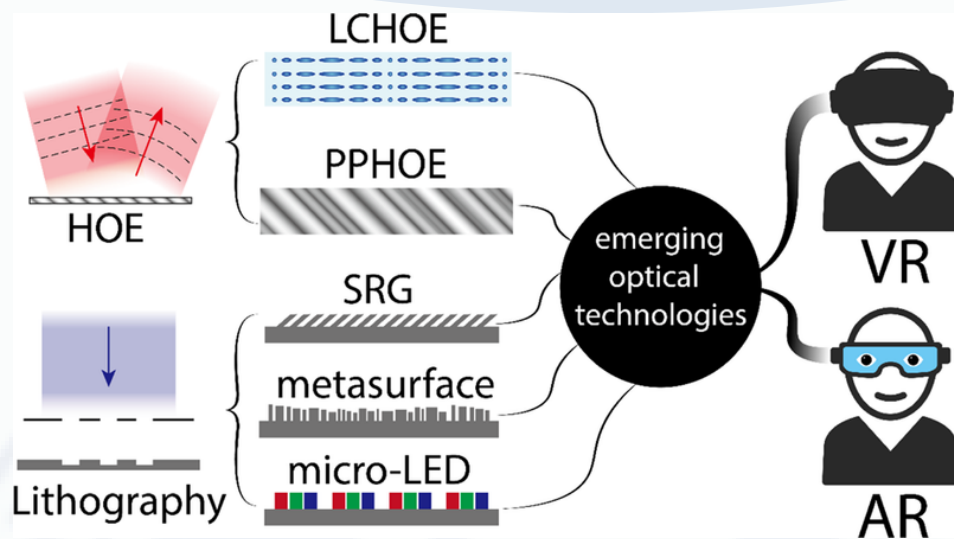


Data science is one of the fastest-growing fields. It has become an important part of almost every sector. It provides the best solutions that help to fulfill the challenges of an ever-increasing demand and a maintainable future.

“Data Science isn’t about the quantity of data but rather than quality.”

-Sathwik Tammishetti
21071A6753
CS-DS-A 2nd year

Augmented Reality



Augmented reality is a technology that has the potential to revolutionize the way we interact with the world around us. It is a technology that overlays digital information onto the real world, allowing users to interact with virtual objects and information as if they were real. With the ability to enhance our perception of the world, AR has the potential to transform the way we live, work, and play. The capacity of augmented reality to improve the user experience is one of its main advantages. AR can enrich our environment with more information and interactivity, making daily activities simpler and more fun. For instance, AR can be applied to the retail industry to let customers virtually try on clothing or to the real estate industry to provide prospective purchasers a virtual tour of home. AR can be utilized in the healthcare industry to help people understand their medical issues. The uses of augmented reality are numerous and cross a variety of sectors. AR can be utilized in education to design engaging learning experiences that simplify difficult ideas. AR can be utilized in manufacturing to increase quality control and expedite production operations. The potential of augmented reality to change how we interact with the world makes it significant. It has the potential to offer a fresh level of involvement in our surroundings, improving the effectiveness, interest, and enjoyment of routine chores. The uses for this technology are nearly limitless as it develops and becomes more sophisticated.

-Sai Rohith
21071A7218
AIDS 2nd year

Smart Spaces

Smart spaces are physical places – like homes, office buildings, or even cities, modified to create an intelligent, connected environment by using technology. A smart spaces framework is the combination of three different environments interacting as one:

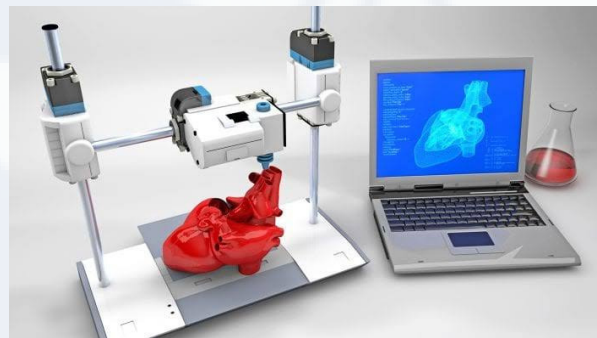
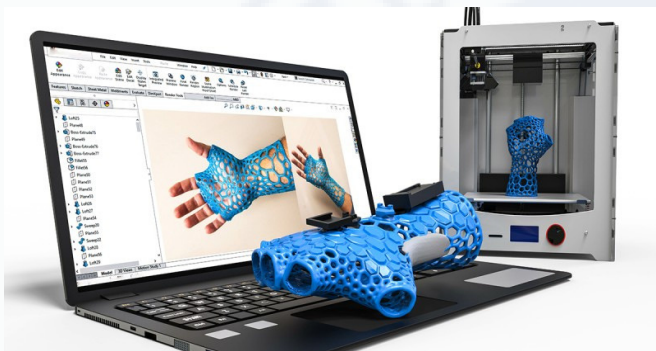
- Virtual Computing Environment:**This allows smart device access to the internet, or private network services.
- Physical Environment:**This is the most varied layer of smart spaces, includes embedded sensors, microprocessors, tracking tags etc.
- Human-Environment:**Devices that accompany people fill this layer . This means humans can make up smart space environments using available technology.
- Reduce Risk mitigation:**The supervisors will be able to catch problems early by using the monitoring and remote control capabilities of smart spaces.
- A safer, smarter experience for work and play:** Surveillance and security systems capabilities of smart space improve the experience of occupants.In a nutshell smart spaces technologies aim to improve efficiency, safety, and security in a remarkably way that it creates an intelligent environment around us.



-Nazma Begum
21071A05Q6
CSE-C 2nd year

3D Printing

The 3D printing technology, also known as additive manufacturing, is the method of creating three-dimensional solid items from a computer file. Additive methods are used to produce objects that are 3D printed. In an additive process, an object is made by building up layers of material until it is complete. Each of these layers can be thought of as a thin cross-section of the overall entity.



When compared to conventional production techniques, 3D printing makes it possible to create complicated shapes with less material.

In the 1980s, 3D printing processes were thought to be only suited for the fabrication of functional or aesthetically pleasing prototypes, and a more relevant phrase at the time was fast prototyping. The capacity to create extremely complex shapes or geometries that would be impossible to manufacture by hand, including hollow pieces or sections with internal truss structures to minimize weight, is one of the main benefits of 3D printing.

When printing a 3D model from an STL file, it must be thoroughly checked for defects. Once the model is finished, the STL file needs to be processed by software known as a "slicer," which creates a G-code file with instructions specific to a particular kind of 3D printer (FDM printers). With 3D printing client software, this G-code file can then be printed.

-A. Siddeshwari
21071A6666
AIML-C 2nd year

Machine Learning

Machine learning is a branch of artificial intelligence (AI) and computer science which focuses on the use of data and algorithms to imitate the way that humans learn, gradually improving its accuracy. Machine learning is a growing technology which enables computers to learn automatically from past data. Machine learning uses various algorithms for building mathematical models and making predictions using historical data or information. Currently, it is being used for various tasks such as image recognition, speech recognition, email filtering, Facebook auto-tagging, recommender system, and many more.

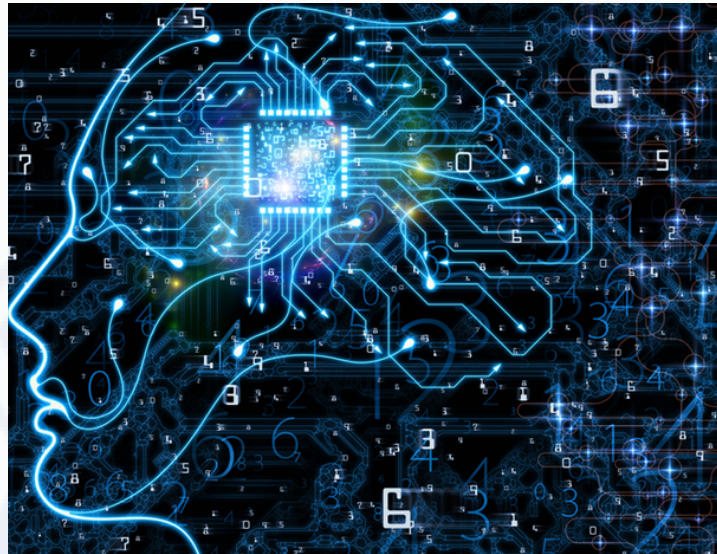


Every Google search uses multiple machine-learning systems, to understand the language in your query through to personalizing your results, so fishing enthusiasts searching for "bass" aren't inundated with results about guitars. As the size of models and the datasets used to train them grow, for example the recently released language prediction model GPT-3 is a sprawling neural network with some 175 billion parameters, so does concern over ML's carbon footprint.

One of the biggest advantages of machine learning algorithms is their ability to improve over time. Machine learning technology typically improves efficiency and accuracy thanks to the ever-increasing amounts of data that are processed. This gives the algorithm or program more "experience," which can, in turn, be used to make better decisions or predictions.

-R Joshini
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AIML-C 2nd year

Deep learning



Deep Learning can be considered as a subset of Machine Learning. It is a field that relies on studying computer algorithms to learn and advance on its own. Deep learning uses artificial neural networks, which are created to mimic how humans think and learn. Speech recognition, language translation, and image categorization have all benefited from deep learning. Deep learning systems process a lot of data and many mathematical computations, they demand powerful hardware.

Deep learning is finding its way into applications of all sizes. Digital assistants like Siri, Alexa, and Google Now use deep learning for natural language processing and speech recognition. Skype translates spoken conversations in real-time. To translate spoken and written languages, Google translate makes use of deep learning. Any photograph can be location-identified using Google Planet. Deep Learning Applications have the potential to save lives by enabling the creation of evidence-based treatment plans for patients and early cancer detection.

-S Omkaarini
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ROBOTICS

Robotics is the engineering branch that deals with the conception, design, construction, operation, application, and usage of robots. We see that robots are defined as an automatically operated machine that carries out a series of actions independently and does the work usually accomplished by a human. Innovations in a variety of fields, such as computer science, mechanical engineering, and electrical engineering, have fueled the growth of robotics.

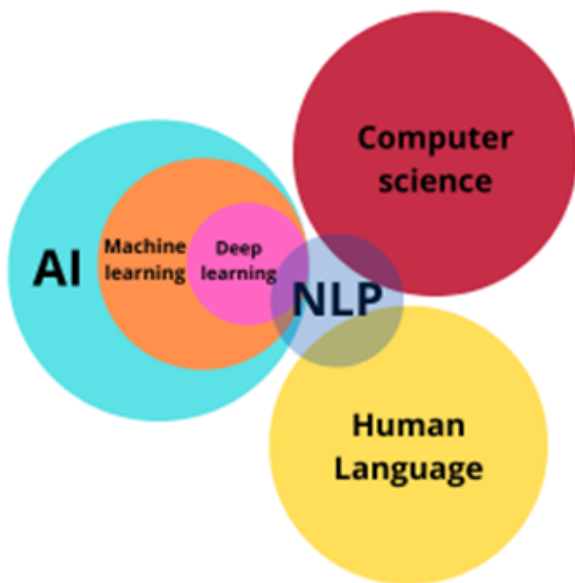


There are many types of robots such as pre-programmed robots, humanoid robots, software bots, teleoperated robots etc. Robots must possess the ability to sense their surroundings and respond properly to environmental changes. Additionally, they must be able to move with control and accuracy. Few major applications of these robots are, they are used in the field of manufacturing, healthcare sector, helps in creating smart cities, space exploration, Agriculture, Military and defense.

In summary, robotics is an exciting topic that has the potential to revolutionize a wide range of sectors. It is a diverse field that draws on many different specialties and necessitates the creation of complex software and algorithms. Robotics will continue to play an increasingly significant part in our society as technology continues to improve and become more powerful and widespread.

-Manthini Ravali
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NATURAL LANGUAGE PROCESSING



The people you ask for queries on websites, your smart assistants, even calls made over the internet, all of them have one thing in common, that is, none of them are actually human. Now, you must be thinking if they are not human, how do they manage to sound and seem so human-like, how do they respond to me so intelligently and how are they so articulate. This is the magic of Natural Language Processing.

Natural language processing or NLP refers to the branch of artificial intelligence that gives the machines the ability to read, understand and derive meaning from human languages. NLP combines the field of linguistics and computer science to decipher language structure and guidelines and to make models which can comprehend, breakdown and separate significant details from text and speech. Everyday humans interact with each other through public social media, transferring vast quantities of freely available data to each other. This data is extremely useful in understanding human behavior and customer habits. Data analysts and machine learning experts utilize this data to give machines the ability to mimic human linguistic behavior. This helps save millions of manpower and time, as you don't need to always have a person present at the other end of the phone. NLP is also a lot more widespread than one may realize, we use it everyday in seemingly normal and insignificant situations. Don't know how to spell a word, autocorrect has you covered. With the increasing demand for automated language solutions companies are looking for NLP experts to join them and are prepared to offer highly lucrative salaries as well.

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METAVVERSE

The Metaverse is a massive virtual world populated by billions of people who work, and interact with one another. Users in Metaverse can gather in the digital universe and engage in any activity. Avatars, which are computerized representations of themselves, are used here. Idea of a completely immersive Metaverse was previously unthinkable, but because of recent advances in technology such as virtual, augmented reality, and blockchain, the Metaverse is now a reality.



The metaverse has the potential to drastically alter how we interact with technology and with one another in the virtual world. Along with Meta, major technology companies like Google, Microsoft, Nvidia, and Qualcomm are investing billions of dollars in the concept of the metaverse. Some are concerned that it would widen the gap between the haves and have-nots, as people may or may not be able to afford the expensive technology to reap its benefits.

It adds digital overlays to the real environment using some kind of lens. AI, IOT, Extended Reality, Brain-Computer Interfaces, 3D modeling and reconstruction, spatial and Edge computing, and blockchain are some of the technologies that will have the greatest impact on metaverse development over the next decade.

Finally, The metaverse's future remains uncertain, but it is evident that it has captured the imagination of many people and will continue to be a fascinating field of invention and revolution.

-Ins kartik
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AIDS 2nd year

GENOMICS



Genomics is the study of the entire genetic material, including the DNA sequence, of an organism. In recent years, advances in genomics technology have revolutionized our ability to analyze and understand the genetic material of different organisms, including humans, animals, plants, and microbes.

One of the key applications of genomics is in the field of personalized medicine. Applications of genome editing technology in the targeted therapy of human diseases: mechanisms, advances, and prospects Hongyi Lii, Yang Yang¹, Weiqi Hong², Mengyuan Huang², Min Wu³, and Xia Zhao¹ Based on engineered or bacterial nucleases, the development of genome editing technologies has opened up the possibility of directly targeting and modifying genomic sequences in almost all eukaryotic cells.

Genome editing has extended our ability to elucidate the contribution of genetics to disease by promoting the creation of more accurate cellular and animal models of pathological processes and has begun to show extraordinary potential in a variety of fields, ranging from basic research to applied biotechnology and biomedical research.

Recent progress in developing programmable nucleases, such as zinc-finger nucleases (ZFNs), transcription activator-like effector nucleases (TALENs), and clustered regularly interspaced short palindromic repeat (CRISPR)-Cas-associated nucleases, has greatly expedited the progress of gene editing from concept to clinical practice.

-R.Indhu sree
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ETHICAL HACKING

In recent times, the most happening thing is being hacked. Hacking is gaining the authorization to access someone's data in a system. Unlike malicious hackers, ethical hackers have the permission and approval of the organization which they're hacking into. Ethical hacking is the practice of performing security assessments using the same techniques that hackers use, but with proper approval from the organization you're hacking into. The main goal of ethical hacking is to use cybercriminal's tactics, techniques and strategies to locate potential weaknesses and increase an organization's protection from data and security breaches.



BENEFITS OF ETHICAL HACKING:

New viruses, malware, ransomware, and worms emerge all the time, underscoring the need for ethical hackers to help safeguard the networks belonging to government agencies, defense departments, and businesses. The main benefit of ethical hacking is reducing the risk of data theft. Additional benefits include:

- Using an attacker's point of view to discover weak points to fix
- Conducting real-world assessments to protect networks
- Safeguarding the security of investors' and customers' data and earning their trust
- Implementing security measures that strengthen networks and actively prevent breaches

-Bhupathi Amulya
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CSE-B 2nd year

CYBERSECURITY



Cybersecurity technology is a rapidly evolving field that encompasses a wide range of tools and software designed to protect computer systems and networks from unauthorized access, theft, and damage. Cybersecurity technology has evolved, with new tools and techniques being developed to keep pace with emerging threats.

One of the most fundamental technologies used in cybersecurity is encryption. Encryption is the process of encoding data in a way that makes it unreadable to anyone without the appropriate key or password. Advanced encryption algorithms, such as AES and RSA, are commonly used to provide high levels of security for sensitive data, such as financial information or personal data.

Firewalls are another critical component of cybersecurity technology. These are software applications that monitor incoming and outgoing network traffic and block any traffic that is not authorized. Firewalls can be hardware-based or software-based, and can be configured to provide different levels of security depending on the needs of the organization.

Intrusion detection systems (IDS) are also important for cybersecurity. These systems monitor network traffic for signs of unauthorized access or malicious activity. IDS can be used in combination with firewalls to provide multiple layers of security.

In conclusion, cybersecurity technology is a constantly evolving field that plays a critical role in protecting computer systems and networks from cyber threats. Encryption, firewalls, IDS, malware detection and prevention, and data backup and recovery are essential tools and techniques used in cybersecurity.

-Aachal jain
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IOT 2nd year



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YAHWANTH SABBITHI
CHAIRMAN



VAISHNAVI SUNKARA
TREASURER



SUSHMA KUNCHALA
PRESIDENT



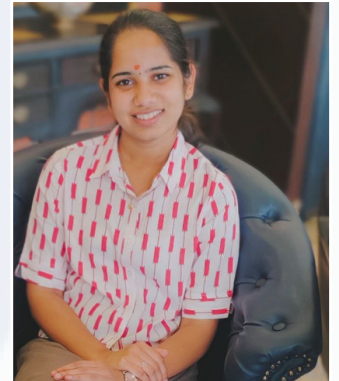
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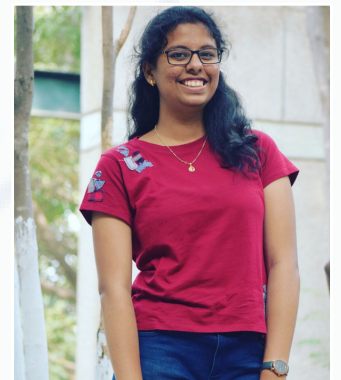
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