VISIONS OF TOMORROW: EXPLORING TECHNOLOGY'S PATHWAY

EDITED BY

Dr. Shweta Tyagi
Dr. Kapil Tyagi

Kripa Drishti Publications, Pune.

B.Tech. First Year

Presents

Visions of Tomorrow: Exploring Technology's Pathway

Abstract Book
(The Souvenir)

For

Poster-making competition on
Artificial Intelligence – A Future Picture of Technology
Cyber Security
Engineering in day-to-day life
Advantages and Disadvantages of Technology

Held on

27 May 2023

Book Title: **Visions of Tomorrow: Exploring Technology's Pathway**

Editors By: **Dr. Shweta Tyagi, Dr. Kapil Tyagi**

PREFACE

It gives us immense pleasure to share with you this edited book on the theme "**Artificial Intelligence – A Future Picture of Technology, Cyber Security, Engineering in day-to-day life, Advantages and Disadvantages of Technology**". The poster-making competition aimed to encourage students to explore and express their thoughts on these relevant topics. Cybersecurity focused on the importance of securing digital systems and data from cyber threats. The advantages and Disadvantages of Technology provided an opportunity for students to critically analyze the impact of technology on various aspects of life. AI - Future Picture of Technology prompted participants to envision the role of artificial intelligence in shaping the future of technology. Engineering in day-to-day life highlighted the practical applications of engineering principles in our daily routines.

The idea of this edited book was conceived during conversations with Dr. Sanjay Katiyar, Dean Academics, regarding the contribution of the significance of such events in enhancing the student's understanding and practical application of the subjects. This edited book would document the contributions of the authors on various current issues in technology. Different authors have contributed their thoughts in abstract form and that has been included in this book.

We thank the organizing team for their kind support and the Judges for their valuable suggestions. We would always and always be thankful to Prof. (Dr) A P Singh, Dean, B.Tech. first Year for his guidance and overall support in organizing the wonderful event.

We would like to convey appreciation to all the contributors for their valuable presentations. We would like to express our gratitude to Dr. Dhiraj Gupta, Director of Greater Noida Institute of Technology, for extending his support and encouragement for this event.

Our special thanks to **Kripa-Drishti Publications** for their kind support and great efforts to bring this book to fruition. We hope this book will help future researchers.

Editors
Dr. Kapil Tyagi and
Dr. Shweta Tyagi

Message From Director's Desk

Dear students, and faculty

I hope this message finds you in good health and high spirits. As the Director of Greater Noida Institute of Technology (GNIOT), it gives me great pleasure to address you all.

GNIOT stands as a beacon of light, illuminating the unseen and unknown recesses of your personality. Our commitment extends beyond academics, encompassing cultural and traditional values, as well as the essential aspects of self-development and self-discipline through self-introspection.

At GNIOT, we firmly believe in nurturing not only the technocrats of tomorrow but also responsible citizens of the world. Our education system emphasizes personal growth, encouraging each student to discover their true potential and transform into creative, sensible, and committed technocrats who are dedicated to serving our nation. In today's rapidly changing world, where globalization is the mantra of the day, it is our earnest endeavor to keep our students updated with the latest technological advancements. By doing so, we aim to help them tap into the deepest core of their latent potential, equipping them to tackle the challenges and opportunities that lie ahead.

Our vision goes beyond simply imparting knowledge; we strive to create future leaders who will manage and establish powerful organizations in the emerging corporate landscape. Through various pedagogical tools,

we enable our students to develop a holistic business perspective and the ability to seize opportunities in a highly competitive environment.

I am confident that with the contemporary education and strong moral values instilled within them, our students will march ahead triumphantly, capturing all the glory and success life has to offer. I extend my heartfelt gratitude to our dedicated faculty and staff, whose unwavering support and guidance enable our students to grow and thrive. Together, we form a strong community that fosters excellence, innovation, and a sense of responsibility.

To the students, I encourage you to make the most of the resources and opportunities provided by GNIOT. Take advantage of the platform we offer, nurture your talents, and continually strive for personal and professional growth. Remember, you are the architects of your own success.

In conclusion, let us embark on this journey together, embracing knowledge, creativity, and the values that GNIOT stands for. Together, we will achieve greatness and contribute positively to society.

Wishing you all the very best for your future endeavors.

Dr. Dhiraj Gupta
Director
Greater Noida Institute of Technology

Message From Dean Academics' Desk

As I sit down to write this message, I wish to express my deepest gratitude to be a part of this esteemed institution this distinguished institution, which has demonstrated enduring excellence and served as a beacon of light since its establishment in 2001. I would like to express my sincere appreciation for all members of our GNIOT family for their unwavering support, affection, and care towards the institute. It is this zeal & vigor that motivates us to work tirelessly towards promoting value-based education and fostering a research-oriented environment for everyone.

Our institution is aimed towards achieving holistic excellence, through an enriched curriculum and a challenging & stimulating cultural & social atmosphere. We encourage our students to become leaders of tomorrow by helping them to develop the knowledge, skills & competencies that are critical to their success.

I consider myself very fortunate to collaborate with a multitude of committed, creative, and compassionate staff, parents, and students, ensuring new experiences & innovations each day. Our institution has always been at the forefront of technological advancements and in order to promote this growth further, we introduced several new training programs in emerging research areas of today that are industry-oriented, starting from infrastructural development for civil engineers to robotics for mechanical engineers to the growth of artificial intelligence & data science for the budding IT professionals.

In the current era of globalization and cutthroat competition, obtaining a specialized and professional education has become essential for achieving success in the future. From my perspective, education serves as a means to acquire knowledge, preserve oneself, and attain prosperity.

It not only provides us with opportunities to thrive, but also imparts us with social skills, fortitude, integrity, and self-esteem.

As we look towards the future, we remain committed to our mission of providing our students with the best possible education and preparing them to make a positive impact in the world. Therefore, we are constantly reviewing our curriculum, exploring new pedagogical approaches, and collaborating with industry partners to provide our students with the most relevant and up-to-date education.

Throughout this process, we view our faculty as facilitators and dynamic agents of change. We also recognize that students are our invaluable partners in the pursuit of excellence. To this end, we endeavor to foster their growth and development through personalized mentorship programs. By providing state-of-the-art infrastructure, a stimulating atmosphere, modern amenities, and proactive administration, we aim to create an ideal learning environment for our students.

In conclusion, I am proud to be a part of this institute, which has a rich legacy of excellence in engineering education. As we continue to build on our strengths and address the challenges of the future, let us all work together towards the common goal of creating a better world.

Dr. Sanjay Katiyar
Dean Academics
Greater Noida Institute of Technology

Message From Dean's Desk

Dear Students

Writing research papers foster critical thinking and analytical skills through hands-on learning among students, besides expanding knowledge and understanding of a chosen field outside of the classroom. Research papers also give you experience in manipulating raw data and information, formulating informed opinions, and learning how others in your field use primary and secondary resources.

A good research abstract is the most emphatic part of the research paper and gives an outline of the larger research work. It is a clear and concise appealing of your work. That decides an article is worth considering for publication.

It gives me immense pleasure to congratulate you all for writing a research abstract, although being a first-year student of engineering education. It is quite commendable that your abstract is going to be published with an ISBN number. It will start a new journey in your higher education as writing an abstract takes a lot of logical thinking and literature review.

Congratulations!!!

Dr. B S Chauhan
Dean, B.Tech. First Year
Greater Noida Institute of Technology

Message From Dean's Desk

The First Year of Engineering plays a key role in the development of the students to be potential engineers. The Department has the following two important responsibilities to undertake and execute efficiently: (1) to provide a strong academic foundation to fresh minds, and (2) to control & manage their distracting tendencies. To shape their career, the Department has a highly qualified, dedicated, and result-oriented faculty crew. All faculty members are post-graduates with an average experience of 15 years and are mostly awarded a Ph.D. or pursuing the same. The faculty members regularly attend seminars, workshops, conferences, and faculty development programs to keep themselves abreast with the latest developments in the subject and teaching methodology. Faculty members have presented research papers and posters in seminars and conferences and have also made the Department proud by publishing research articles in National and International journals.

For the overall development of students, we use the feedback system of each stakeholder which includes regular mentor/mentee meetings, informing the progress of students to parents and corrective actions for aspects where improvement is required.

The students are given personal attention and care by monitoring their academic performance, by conducting improvement classes through peer-guided self-study methodology, tutorial classes, and regular counseling. Question banks in all subjects are developed for the students, comprising questions of different types and difficulty levels. Home assignments, quizzes & viva-voce are regularly assigned and conducted as a part of the teaching-learning process and to prepare the students to face the internal & external examinations. The Department is well equipped with spacious laboratories and all air-conditioned classrooms with advanced facilities.

Apart from the curriculum, extra curriculum activities are arranged regularly like debates, technical quizzes, brain-storming, expert lectures, field visits, sports & cultural events, club events, etc. to create versatile talent in students.

To conclude, the Department catalyzes and assures a very healthy, cordial but competitive ambiance for our future engineers.

Dr. A P Singh
Dean, B.Tech. First Year
Greater Noida Institute of Technology

Bachelor of Technology
(First-Year)

Vision & Mission

Vision:

To become a Centre of Excellence in the field of basics of science, technology, and personality development and prepare students for the core program to serve society for the good of humankind.

Mission:

- To create an academically broad and culturally rich environment.
- To imbibe strong basics of sciences and technical education in consistent with future requirements.
- To promote interdisciplinary and trans-departmental culture.

CONTENT

1. The Transformative Power of Artificial Intelligence: Revolutionizing Industries and Unlocking Human Potential

Ruchi Pandey, Shobhit Singh

B.Tech. First-Year,
Branch: CS-AI,
Greater Noida Institute of Technology,
Greater Noida.

Abstract:

Artificial intelligence is the simulation of human intelligence processes by machines, especially computer systems AI's influence on technology is due in part because of how it impacts computing through AI. Computers have the ability to harness massive amounts of data and use their learned intelligence to make optimal decisions and discoveries in fractions of the time that it would take humans. Artificial intelligence can boost efficiency and increase human's capacity to perform certain tasks AI frees humans to do work they are better equipped for such as creative and empathetic talks by taking over repetitive or dangerous talks. Artificial intelligence is the science and engineering of making intelligent machines aimed at providing machines with the ability to think, reach, and surpass human-level intelligence. AI is ubiquitous and not only limited to computer science but has evolved to include other areas like health, security,

education, music, art, and business applications. AI applications are deeply embedded in the infrastructure of every industry. AI is expected in a few years to touch nearly all industries and there are plenty of ways AI is and can transform certain industries. AI is currently being utilized for a wide range of activities including medical diagnosis, electronic trading platforms, robot controls, and remote sensing. It has been used to develop and advance numerous fields and industries including finance, health care, education, transformation, and robotics.AI researchers have created many tools to solve the most difficult problems in computer sciences and other fields. The current AI performance ranges between sub-human optimal and superhuman performance. A wide range of tasks can be solved by AI applications including facial recognition, speech recognition, object recognition, image classification, and surprising human." MACHINE INTELLIGENCE IS THE LAST INVENTION THAT HUMANITY WILL EVER NEED".
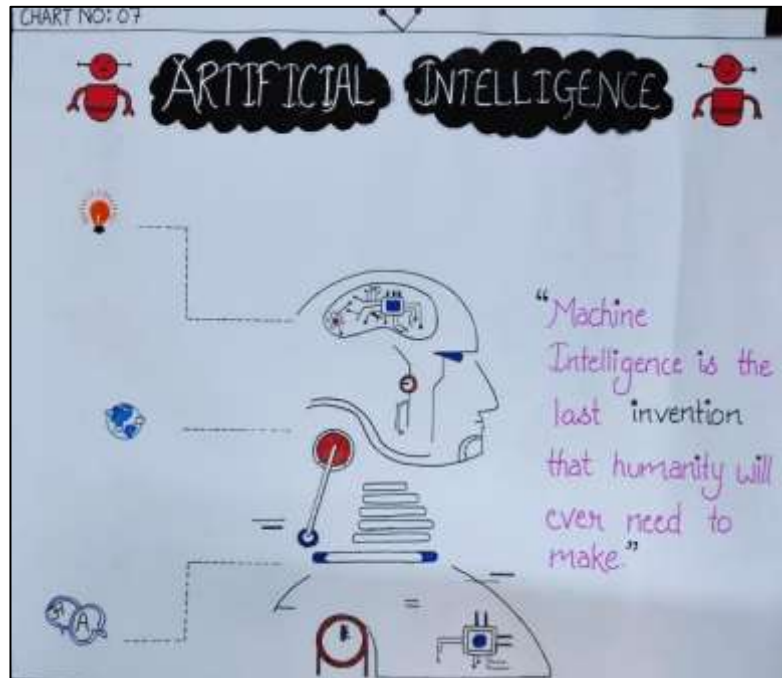
Figure 1.1: Artificial Intelligence

2. Securing the Digital Landscape: A Comprehensive Approach to Cybersecurity for Data Protection and Network Security

Sangam Kumari, Shivani Kumari

B.Tech. First-Year,
Branch: IT,
Greater Noida Institute of Technology,
Greater Noida.

Abstract:

The technique of protecting internet-connected systems such as computers, servers, Mobile devices, electronic systems, networks, and data from malicious attacks is known as cybersecurity. Today we live in a digital era where all aspects of our lives depend on the network, computer, and other electronic devices and software applications. Cyberattack is now an international concern that hacking the system, and other security attacks could endanger the global economy. Therefore, it is essential to have an excellent cybersecurity strategy to protect sensitive information from high-profile security breaches. goals of cybersecurity's main objective are to ensure data protection. The benefits of cybersecurity are cyber-attacks and data branch protection for businesses, data, and network security

are both protected, unauthorized user access is avoided, end-user and endpoint device protection, and after a breach, there is a faster recovery time. Cyber safety tips are to update software and operating system, use strong passwords, use antivirus software, backup data, and avoid using unsecured Wi-Fi networks in public places.
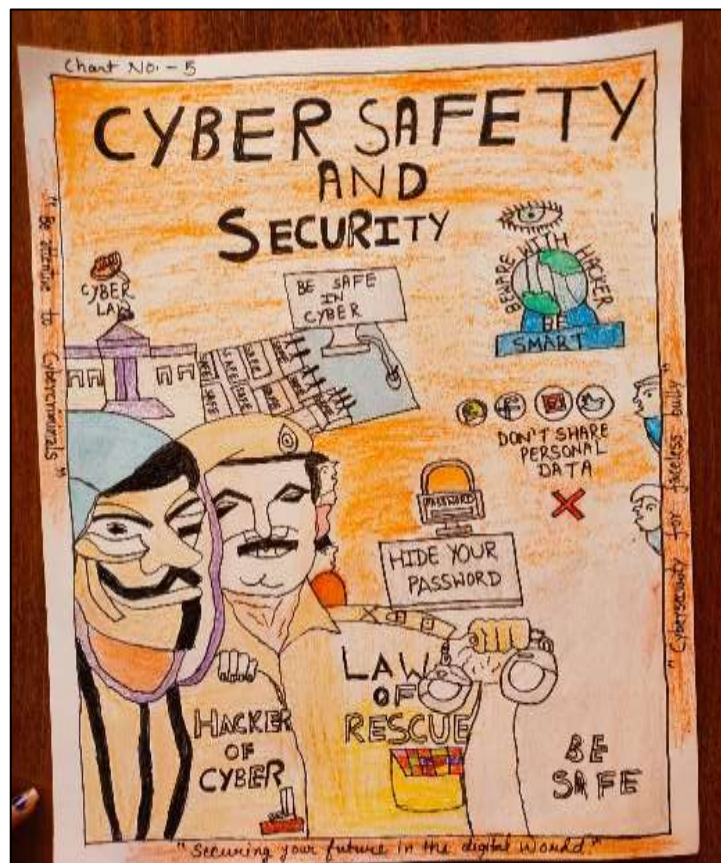
Figure 2.1: Cyber Security

3. Safeguarding Privacy and Security: A Comprehensive Approach to Cybersecurity

Shariq IkramKhan, Shubham Shrivastava

B.Tech. First-Year,
Branch: IOT,
Greater Noida Institute of Technology,
Greater Noida.

Abstract:

The Technique of protecting internet-connected systems such as computer servers, mobile phones, electronic systems, networks, and data from malicious attacks is known as cyber security. We can divide cybersecurity into two parts one is cyber and the second is security. Cyber refers to the technology that includes system networks, programs, and data. Security is concerned with the protection of systems, networks, applications, and information. Today we live in a delightful world where all aspects of our life live depend on mobile phone networks, computers, and many more electronic devices and software applications. All critical infrastructure such as the banking system, wealth care, financial institutions, governments, and manufacturing industries use devices connected to the internet. Some of their information such as financial data, and personal data,

can be sensitive to unauthorized access or exposure that could have negative consequences. Cyber-attack is now an international concern that the system and other security attacks could enhance the global economy. Therefore, it is essential to have an excellent cybersecurity strategy to protect sensitive information from high-profile security branches. In my poster, I tried to show the concern regarding how to keep everything private and how to maintain privacy regarding to personal data and financial data so that people can be saved from cyber-attacks.

Figure 3.1: Cyber Security

4. Embracing the Synergy: Unleashing Human Potential with Futuristic AI Technology

Shivani Tomar

B.Tech. First-Year,
Branch: IT,
Greater Noida Institute of Technology,
Greater Noida.

Om Raikwar

B.Tech. First-Year,
Branch: CS-AIDS,
Greater Noida Institute of Technology,
Greater Noida.

Abstract:

Artificial Intelligence is a branch of Computer Science that focuses on the construction and analysis of these types of systems. Artificial intelligence (AI) can be found in many industries like finance, health care, education, law, business, and manufacturing. The new era of artificial intelligence has brought many changes to our society and lifestyle. With the help of AI, we can make our routine work easier and simpler. It is no secret that artificial intelligence is changing the workforce. In recent years, we have seen a number of jobs that were once done by humans become automated. This trend is only expected to continue as AI technology

advances. There are a number of reasons why AI is having such a big impact on the workforce. One reason is that AI can do things faster and more accurately than humans. This is especially true for repetitive tasks such as data entry or analysis. Another reason is that AI can work 24 hours a day without getting tired. This means that companies can save money on labour costs by using AI instead of human workers. So, It depends on what you do for a living. If your job involves repetitive tasks or can be done by a machine, then there is a good chance that it will be replaced by an AI in the future. However, if your job requires creativity or human interaction, then you are less. AI will bring tremendous positive changes to the world. Critics predict that it will also bring destruction and even human extinction. In some ways they are right: it will cause massive destruction to certain jobs. However, in other ways they are quite wrong, e.g.: machines cannot be conscious and creative. Artificial intelligence (AI), also referred to as machine intelligence, is the capability of a machine to imitate intelligent human behavior. Artificial intelligence and its derivatives are the ability of a machine to solve complex problems on an intelligent level equal to human beings. This can be as simple as a calculator which simplifies things within seconds. So, we can't compare human intelligence and artificial

intelligence. But it is obvious that AI can replace many human-generated works. You can think that this is one of the technological evolutions where machines can think like humans.

The generative AI tool, ChatGPT by OpenAI, is one of the fastest-growing applications in recent history, amassing one million users in five days. To put this in perspective, the following is the time it took for other popular apps to acquire the same number of users. One of the reasons for ChatGPT's surging popularity is its capacity to replicate human language which can be used to create multiple types of content. It's a safe bet that your employees and your client's employees are using ChatGPT for everything from writing blog posts, programming codes, composing song lyrics, and more.

In this poster, two hands are shown approaching each other, one is the human hand and the other one is the hand of AI. It depicts us that we can unleash our full potential with the help of futuristic technology and AI. We can work at our best efficiency by takingthe help of AI. Teachers won't be replaced by AI because many people think that if AI comes, teachers will lose their jobs but it is nothing just a misunderstanding.
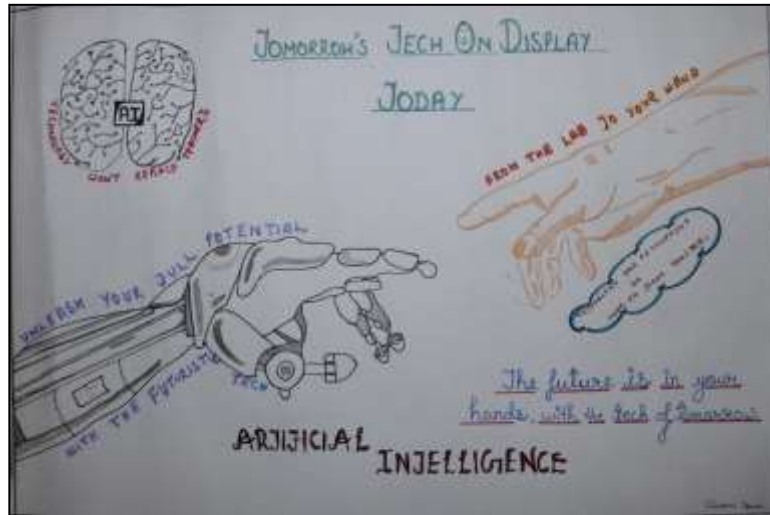
Figure 4.1: Artificial Intelligence

5. Comprehensive Cybersecurity: Safeguarding Systems, Networks, and Data from Threats

Raju Kumar Maurya

B.Tech. First-Year,
Branch: IT,
Greater Noida Institute of Technology,
Greater Noida.

Abstract:

Cybersecurity is the application of technologies, processes, and controls to protect systems, networks, programs, devices, and data from cyber-attacks. Cybersecurity is crucial because it safeguards all types of data against theft and loss. Sensitive data, protected health information (PHI), personally identifiable information (PII), intellectual property, personal information, data, and government and business information systems are all included. Many websites would be practically impossible to enjoy if cyber security specialists did not work ceaselessly to prevent denial-of-service attacks. Consider not having access to Sampliner's experienced and certified professional network – no more tips, methods, and guidance to help you reach your professional objectives. Network Security involves implementing the hardware and software to secure a

computer network from unauthorized access, intruders, attacks, disruption, and misuse. This security helps an organization protect its assets against external internal threats. Application Security involves protecting the software and devices from unwanted threats. This protection can be done by constantly updating the apps to ensure they are secure from attacks. Successful security begins in the design stage, writing source code, validation, threat modeling, etc. before a programming device is deployed. Information or Data Security involves implementing a strong data storage mechanism to maintain the integrity and privacy of data, both in storage and in transit. Mobile Security involves securing the organizational and personal data stored on mobile devices such as cell phones, computers, tablets, and other similar devices against various malicious threats. These threats are unauthorized access, device loss or theft, malware, etc. Cloud Security involves protecting the information stored in the digital environment or cloud architectures for the organization. It uses various cloud service providers such as AWS, Azure, Google, etc., to ensure security against multiple threats.

Figure 5.1: Cyber Security

6. The Dual Nature of Technology: Balancing Advancements and Consequences in Modern Society

Amit Kumar

B.Tech. First-Year,
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Greater Noida.

Luvit

B.Tech. First-Year,
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Abstract:

Technology which has lots of significance in our day-to-day life can also have many disadvantages for human life as well as for our society. Technology can be seen for the betterment of humans as well as society. Due to increasing in developmental projects and advancement in technology has led to bad effects on the environment and human health. It can be seen that various monuments are losing their identity due to pollution such as TAJMAHAL. Technology that advanced has created a way to outer space. It has made human life very dependable on various equipment. It has made our work simple and easy. Communication has become

very easy because of technology. We can connect ourselves to the world within seconds. Technology gives us access to express our bright ideas to the world. The single light of technology can help a person to write a bright future. With the help of technology, we can create more and more useful devices with the help of our ideas and technology which can be more advantageous than having disadvantages.

Figure 6.1: The Dual Nature of Technology

7. Enhancing Efficiency and Productivity while Posing Challenges of Technology

Shrey Chauhan

B.Tech. First-Year,
Branch: CS-AIML,
Greater Noida Institute of Technology,
Greater Noida.

Abhishek Kumar

B.Tech. First-Year,
Branch: CS-AIDS,
Greater Noida Institute of Technology,
Greater Noida.

Abstract:

Efficiency and productivity technology has significantly improved efficiency and productivity in various industries. It automates repetitive tasks, streamlines processes, and enables faster communication and information sharing, leading to increased productivity and reduced costs. communication and connectivity technology has revolutionized communication, allowing people to connect instantly across the globe. It has facilitated the exchange of information, ideas, and knowledge, fostered collaboration, and fostered global connections. Access to Information, the internet, and technology have made information more accessible than ever before. People can quickly access vast

amounts of information, conduct research, and stay updated on current events, promoting learning and knowledge-sharing. automation and Innovation technology have led to the automation of various tasks, enhancing precision and accuracy. It has also driven innovation by enabling the development of new products, services, and solutions, revolutionizing industries, and improving quality of life. Dependency and overreliance in society's increasing dependence on technology can be problematic. Reliance on technology for everyday tasks and activities can lead to a loss of essential skills, reduced self-reliance, and vulnerability to system failures or disruptions. Privacy and Security Concerns Technology has raised concerns about privacy and security. With the collection and storage of vast amounts of personal data, there is a risk of data breaches, identity theft, and invasion of privacy. Cybersecurity threats, such as hacking and malware, pose significant risks to individuals and organizations. Social isolation and disconnect While technology connect people virtually, it can also contribute to social isolation and a sense of disconnection. Excessive reliance on technology for communication can diminish face-to-face interactions and interpersonal relationships, leading to social and emotional challenges. Economic Disruptions and Job Losses:

Technological advancements can disrupt industries and lead to job losses. Automation and artificial intelligence may replace human workers in certain tasks and professions, resulting in unemployment and income inequality. It is important to recognize and address these disadvantages to ensure that technology is used responsibly and ethically, mitigating potential negative impacts while maximizing its benefits.

Figure 7.1: Advantage and Disadvantage of Technology

8. Nature of Technology: Uniting Humanity while Posing Challenges

Anjali Thakur, Arushi Rawat

B.Tech. First-Year,
Branch: ECE,
Greater Noida Institute of Technology,
Greater Noida.

Abstract:

Technology is advancing day by day. Technology has both Advantages and disadvantages. Our poster shows that it keeps people connected worldwide. It is best when it brings people together. There is a production graph which shows the rate increasing every year with advancements in technology. Whereas your data is being accessed by an AI system to take in large data sets, uncover patterns among the data, and answer questions about it. Though there are advantages of technology there are disadvantages too. There are a number of online harassments that have been done worldwide and are common these days. No technology that's connected to the internet is unhackable, it also shows that every species is becoming extinct every year in the name of technological development. Lastly, I want to conclude my topic by saying that always focus on the advantages of technology rather than the disadvantages.

Figure 8.1: Advantage and Disadvantage of Technology

9. Strengthening Cybersecurity Defenses: Safeguarding Against Malicious Attacks and Threats in the Digital Era

Bhavya Shukla

B.Tech. First-Year,
Branch: CS-IOT,
Greater Noida Institute of Technology,
Greater Noida.

Abstract:

Cyber security is the practice of defending computers, servers, mobile devices, electronic systems, networks, and data from malicious attacks. The five Cs of cyber security are five areas that are of significant importance to all organizations. They are change, compliance, cost, continuity, and coverage. Ways to save ourselves from malicious attacks by cyber threats: choose a strong password and keep it private, check website URL, be careful of what you post online, shop safely on a trusted website, check Emails before opening them, and avoid phishing and scams.

Figure 9.1: Cyber Security

10. Artificial Intelligence: Revolutionizing Industries and Shaping the Future

Vishakha Bhati

B.Tech. First-Year,
Branch: CS-AIDS,
Greater Noida Institute of Technology,
Greater Noida.

Abhishek

B.Tech. First-Year,
Branch: CS-AI,
Greater Noida Institute of Technology,
Greater Noida.

Abstract:

Artificial intelligence will lead to more new and important discoveries in the future through its predictive modeling Lawrence Berkeley National Laboratory was able to predict new thermoelectric artificial intelligence. artificial intelligence is the intelligence that causes to buy a machine under which they can perform various functions with human help with help. AI machines will be able to learn solve problems plan things etc. Artificial Intelligence full example is the simulation of human intelligence by machine in the field of Technology .artificial intelligence is evolving rapidly day by day and it is believed at in the new future artificial intelligence is going to change human life very drastically

and will most probably and all the cases of the world by sorting out of the major problem the Robotics Revolution has started since Robotics have been manufactured the efficiency and productivity in working condition a green rapidly they found a huge League in early and they become part of many workplaces more over they can implement a white variety of task successfully in a record time compared to human performance also they are playing a pre-boarder in helping labourers in their work to be faster and more effective when automation of making some steps in a work process increases the value of the remaining human links in the production chain. artificial intelligence in day-to-day leaves includes Siri, Google, Drone, advertising and so much more every industry is incorporating artificial intelligence into its backbone in one form or another other changing the way with think and live. Our poster represents the future picture of technology there is some structure of future machines there is also a robot which represents the future jobs that how the robot continuously replaces humans and represents the robotic revolution has started robot manufactured efficiency and productivity in working conditions and growing reactively they formed a huge leap in a leaf and they become part of many workplaces.
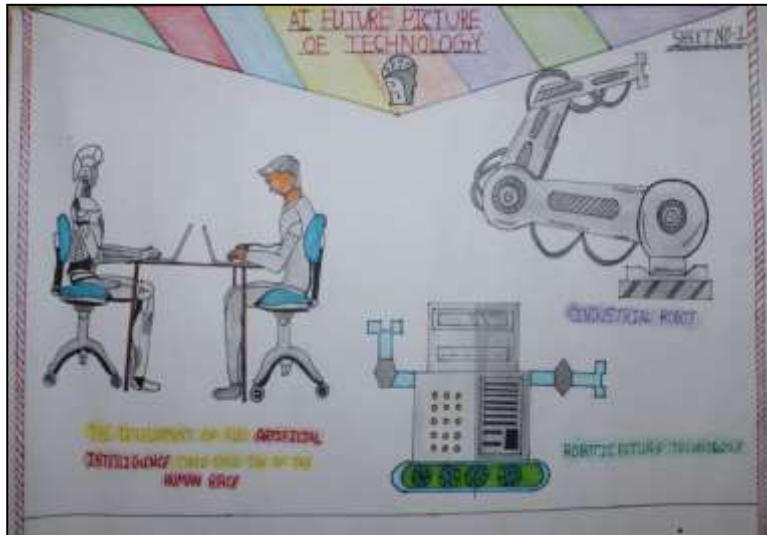
Figure 10.1: Artificial Intelligence

11. Umbrella of Protection: Safeguarding Data and Passwords in the Cybersecurity Landscape

Rahul Kumar Singh

B.Tech. First-Year,
Branch: CS-IOT,
Greater Noida Institute of Technology,
Greater Noida.

Abstract:

A successful cybersecurity approach has multiple layers of protection spread across the computer networks to keep safe. In an organization, the people processes and technology must all complement one another to create an effective defense from cyber-attack. I draw an umbrella on the poster to indicate how to umbrella helps to secure the human body from sunlight and rainwater so we also have to secure our data and password like an umbrella because that is important for us. Users must understand and comply with basic data security principles like choosing strong passwords being wary of attachments in email and backing up data. Phishing is the practice of sending "Fraudulent emails that resemble emails from repeatable sources. The aim is to steal sensitive data like credit card numbers and login information". It's the most common type of cyber-

attack. Mobile devices such as tablets and smartphones have access to corporate data exposing businesses to threats from malicious apps zero-day phishing and instant messaging attacks. So, cybersecurity is important in today's connected world everyone benefits from advanced cyber defense programs. At an individual level, a cybersecurity attack can result in everything from identity theft to extortion attempts to the loss of important data like family photos, and information.
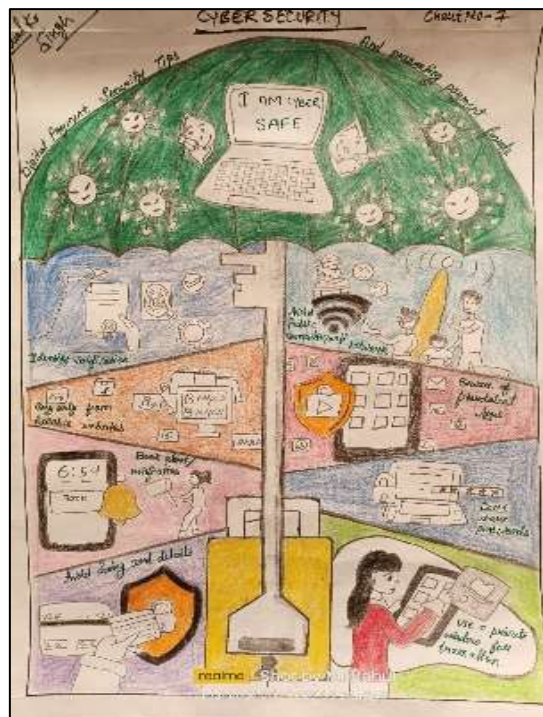
Figure 11.1: Cyber Security

12. The Evolution of Engineering: A Journey Through Innovation and Exploration

Abhishek Singh

B.Tech. First-Year,
Branch: CS-AI,
Greater Noida Institute of Technology,
Greater Noida.

Navya Mishra

B.Tech. First-Year,
Branch: CS-AIML,
Greater Noida Institute of Technology,
Greater Noida.

Abstract:

In the 21st if we are to look around our society, we will see most of it displays several marvels of engineering, which shows why it is an important discipline. The field of engineering consists of a vast sea of knowledge whose boundary is infinite. And through the discoveries and breakthroughs made by engineers almost every day, the expertise and information keep growing. Transportation is a great wonder in the contributions of engineering made to humankind. Using transportation devices, we have voyaged into outer space and reached the moon as well. And Vehicles are such inventions that have certainly made the commute a

whole lot easier. Earlier, the engineering field only consisted of core branches that specialized in individual departments of work, and the divisions were Mechanical, Electrical, and Civil. But eventually, with much more advanced discoveries in the field of technology and a combination of engineering with other areas of study, some more branches of course under the engineering field became popular. Among them, a few Engineering branches to name are Computer, Aerospace, IT, Electronics and Communication, Electronics and Instrumentation, Biomedical, Chemical, Textile, Petroleum, Food Technology, etc.
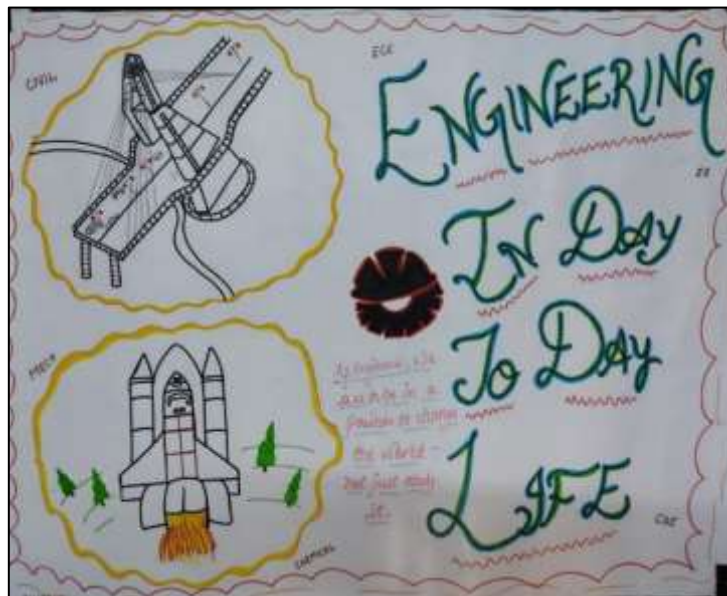

Figure 12.1: The Evolution of Engineering

13. Shielding Your Digital Fortress: The Crucial Role of Passwords in Cybersecurity

Devant Pal

B.Tech. First-Year,
Branch: CS-AI,
Greater Noida Institute of Technology,
Greater Noida.

Abstract:

Passwords play a crucial role in ensuring cybersecurity across various digital platforms and services. They act as the first line of defense against unauthorized access, protecting sensitive information and maintaining the confidentiality, integrity, and availability of digital assets. The importance of passwords in cybersecurity can be summarized in the following key points. Firstly, passwords serve as a means of authentication, verifying the identity of users before granting access to systems or accounts. By requiring individuals to provide a unique combination of characters known only to them, passwords help prevent unauthorized users from gaining entry and potentially causing harm. Secondly, passwords contribute to the concept of data privacy. By establishing individual user accounts with unique passwords, organizations can enforce access controls,

restricting sensitive information to only those who possess the necessary credentials. This helps safeguard personal data, trade secrets, financial records, and other confidential information from falling into the wrong hands. Furthermore, passwords act as a deterrent against brute force attacks and unauthorized intrusions. A strong, complex password that incorporates a combination of upper- and lower-case letters, numbers, and special characters makes it significantly more difficult for attackers to guess or crack the password through automated methods. Regularly changing passwords also adds an additional layer of security. By updating passwords periodically, users reduce the risk of compromised accounts due to stolen credentials or data breaches. However, it is important to note that the effectiveness of passwords depends on user behavior and password management practices. Weak passwords, such as common words, sequential numbers, or personal information, are easily guessable and compromise the security of accounts. Therefore, it is essential to educate users about the significance of strong passwords and encourage the use of password managers to generate and securely store complex passwords. In conclusion, passwords are an integral part of cybersecurity, serving as a fundamental means of authentication, access control, and data protection. Employing strong, unique

passwords and following good password management practices greatly enhances the overall security posture and helps defend against cyber threats

Figure 13.1: Cyber Security

14. Cybersecurity: Safeguarding Your Digital Life

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Abstract:

Cybersecurity is like a digital lock for your online life. It helps ensure that your personal information stays safe and secure from cyber criminals who might try to steal it. The cyber security poster contains essential information on how to protect your personal data and information from cyber-attacks. The poster highlights DEFEND, DETECT &PROTECT. The most common types of cyber threats, including phishing, hacking, and cyber-attacks, and provides practical tips on how to prevent them, which is mentioned on the right-hand side of the poster as "THINK SMART". The poster emphasizes the importance of being cautious when opening emails or clicking on links, as phishing attacks are one of the most common ways that cybercriminals try to trick you into giving them sensitive information. The poster also provides information on how to protect against hacking, which is when an attacker gains unauthorized access to your

computer or network. It advises users to use strong passwords and to keep software up to date. In addition to phishing and hacking, the poster also provides information on how to protect against cyber-attacks, which can include malware, ransomware, and other types of malicious software. Finally, the poster provides practical tips on how to protect your personal data and information from cyber-attacks. It emphasizes that there should be a safety lock between the user and either a known or unknown person. Facebook, Instagram, and Twitter all have similar safety features to help keep their users safe. These features include two-factor authentication, privacy settings, and the ability to report abuse. Check your privacy settings regularly to ensure that you're only sharing information with people you trust. If you experience any abuse or harassment, report it to the platform's support team. Remember to be cautious and to stay informed about the latest threats. Overall, the cyber security poster is an essential tool for anyone who wants to stay safe online. It provides practical tips on how to protect against phishing, hacking, and cyber-attacks, and emphasizes the importance of being cautious and staying informed about the latest threats. By following the tips on the poster, users can help protect themselves and their data from cybercriminals and stay safe online. Lastly, it also

emphasizes people's to *BE RESPONSIBLE, BE SAFE, BE SMART, and BE A GOOD DIGITAL CITIZEN.*

Figure 14.1: Artificial Intelligence

15. Envisioning the Future of Artificial Intelligence: Unleashing the Power of Advanced Machines

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Aman Jyoti Jha

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Abstract:

Our poster gives an idea of AI technology and about what is the futuristic plan of AI. in this poster we have shown only the positive side of AI. if we want to know the futuristic plan of ai we need to know. AI defines artificial intelligence as machines that have the capability to think and work like humans. Artificial Intelligence is broadly categorized. Reactive machines of AI have a short memory. They do not store previous memories. The IBM chess game program will be the perfect example of Reactive machines. Limited memory Artificial Intelligence: As the name suggests, it has limited memory. Self-driving cars are examples of Limited

Memory AI. Theory of mind Artificial Intelligence: These types of AI are under processing. It aims to make machines that can hold human emotions and thoughts. Self-aware Artificial Intelligence is the advanced version of AI. It is believed that it will be more intelligent than humans. Computers can solve problems humans can't, and the military has much ai equipment and soldiers, With the rise of automation, many jobs will be replaced by machines, leading to increased efficiency and cost savings for businesses.

Figure 15.1: Artificial Intelligence

16. AI: Shaping the Future of Technology and Society

Atul Verma

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Shaktesh Pandey

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Abstract:

As we know the use of "artificial intelligence", in our daily life. Nowadays, the use of AI has increased suddenly as example we can see that if we have to create a video from a script, then with the help of artificial intelligence, we only need to put the script on the AI platform 'PICTORYAI', and this AI website will be creating the video from the script easily, and also it provides vice-overs to the video, which makes it an easy task for the video creators. As above we have seen a little sparkle of AI. As it is going to become an essential part of our lives, so everyone must need to know about 'AI: the future of technology'. So, that each and every one can know about AI through our poster. In this poster, we

have drawn a futuristic view of modern technologies. In almost every technology we are going to use in the future every technology has a common feature of AI.AI means in the sense, that college and school teachers are replaced by artificial teachers {Robotic teachers}. With the help of a robotic teacher, students will be learning each and every topic by visualizing it. It will be easier for the students to understand the topics by visualization because it is the best way for understanding anything. There are many other works that are going to be improved by AISuch as farming with the help of artificial intelligence we will be creating artificial farmers so that, we can remove the workload on human farmers. These robotic farmers will be working as replacements for human workers in the field, which will be increasing the production of the crops. In some technologically advanced countries like Switzerland, Canada, Russia, etc. machines that are being controlled by AI are used for cultivation, harvesting, irrigation, and sowing of crops, which are just examples use of AI in modern technologies. Artificial Anchor, some days before, we have seen that a news channel has launched, an artificial anchor which was delivering the news content live on the news channel, which is also an example of the use of AI in modern technologies. Software developers know about the craze of

software development these days, for which software developers get huge amounts of money. Now companies that are paying this money to the software developer also want its profit therefore they want that, artificial intelligence should develop their software in the future. A little example of this is CHAT GPT [open ai], which is a kind of search engine that provides you with the most accurate and relevant answer to the question asked with it which is possible with the help of AI. The most important use of AI will be in defense because, with the help of robotic soldiers, we can minimize the death of soldiers in wars. We will be able to control missiles and weapons as much as we want so AI will going to have a great impact in wars. There are many other technologies that can be improved by AI, which will be seen in the future. Some bad effect of AI that is going to be seen in the future are as follows {these are only predictable problem that may arise due to AI}. Unemployment will be the biggest problem in the future that will be arising due to the use of AI in factories, hospitals, Defense, etc. If AI will go out of control from humans, then it can destroy the whole human species.
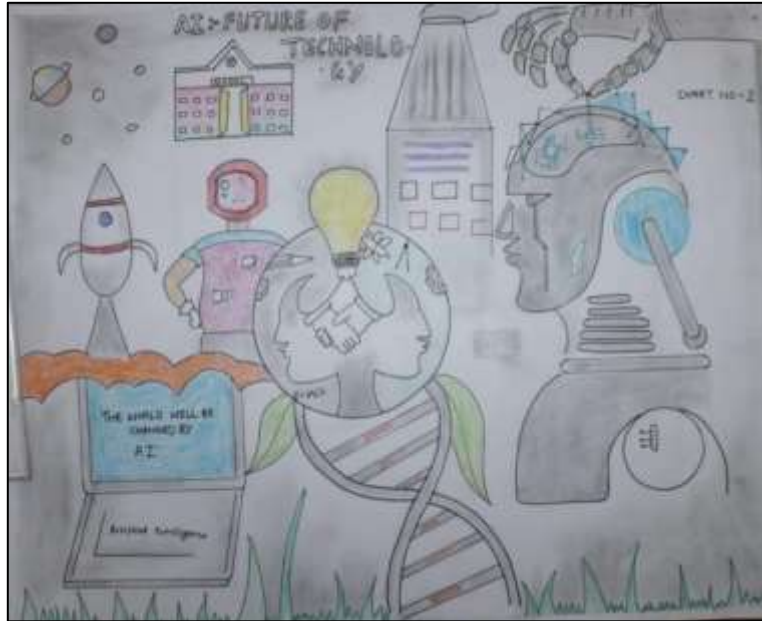
Figure 16.1: Artificial Intelligence

17. The Transformative Power of Engineering: Shaping Our World through Innovation and Problem-Solving

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Abstract:

Engineering is the application of scientific and mathematical principles to create innovative solutions and design structures, systems, and technologies that shape our daily lives. This abstract explores the essence of engineering and its profound impact on our day-to-day existence. It discusses how engineering affects various aspects of our lives, including transportation, communication, infrastructure, healthcare, and technology. Engineers play a pivotal role in developing efficient transportation networks, designing communication systems that connect us globally, constructing resilient buildings and infrastructure, and

advancing medical technologies for improved healthcare outcomes. They also contribute to the development of consumer products that enhance our comfort and convenience. Engineering has transformed the way we live, enabling faster and safer travel, instant communication, sustainable energy solutions, advanced healthcare interventions, and a multitude of technological advancements that have revolutionized our daily experiences. The significance of engineering is immense and far-reaching, touching virtually every aspect of human life. Here are some key points highlighting the importance of engineering. Problem-Solving and Innovation engineering are all about finding creative solutions to complex problems. Engineers apply scientific and mathematical principles to design, build, and improve structures, systems, and technologies. Through innovation and ingenuity, they address challenges and create practical solutions that enhance efficiency, functionality, and safety. Infrastructure development engineers are responsible for constructing and maintaining the infrastructure that forms the backbone of modern society. They design roads, bridges, buildings, water supply systems, and power grids, ensuring the smooth functioning of cities and communities. Strong infrastructure promotes economic growth, facilitates transportation, and

improves the quality of life. Technological advancements in engineering drive technological progress. From advancements in information technology to breakthroughs in biomedical devices, engineers develop and improve technologies that revolutionize industries and transform the way we live, work, and communicate. Sustainable development with growing environmental concerns, engineering plays a crucial role in developing sustainable solutions. Engineers design renewable energy systems, develop eco-friendly materials and practices, and promote energy efficiency to mitigate the impact of human activities on the planet. Conclusion Overall, engineering is significant because it improves our quality of life, shapes the world we live in, and addresses the challenges of the present and future. It is a field that combines science, technology, and innovation to create positive and lasting impacts on society.

18. The Crucial Role of Cybersecurity: Protecting Data, Systems, and Trust in the Digital Age

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Abstract:

Cybersecurity refers to the practice of protecting computer systems, networks, and data from unauthorized access, theft, damage, or disruption. It involves implementing measures and protocols to prevent and mitigate cyber threats, such as cyberattacks, data breaches, and unauthorized intrusions. Ensuring that sensitive information is accessible only to authorized individuals or entities. This involves encryption, access controls, and secures data storage practices. Safeguarding data and systems from unauthorized modification, tampering, or corruption. Measures such as data validation, checksums, and secure coding practices

help maintain data integrity. Ensuring that systems and data are accessible and usable when needed. This involves implementing redundancy, disaster recovery plans, and robust network infrastructure to minimize downtime and maximize availability. Verifying the identity of users and granting appropriate access privileges based on their roles and responsibilities. This is achieved through strong authentication methods like passwords, multi-factor authentication, and access control policies. Employing technologies and techniques to identify and mitigate cyber threats. This includes intrusion detection systems, firewalls, antivirus software, and security monitoring tools to detect and respond to potential attacks. Establishing processes and procedures to effectively respond to and mitigate security incidents. This involves incident detection, containment, eradication, and recovery to minimize the impact of a cyberattack or breach. Cybersecurity is crucial in today's interconnected world to protect sensitive data, systems, and individuals from malicious activities. It safeguards against unauthorized access, data breaches, identity theft, and financial losses. With the increasing frequency and sophistication of cyber-attacks, organizations, and individuals must prioritize cybersecurity to maintain trust, confidentiality, and integrity. Failure to do so can result in

severe consequences such as reputation damage, legal liabilities, financial ruin, and compromised national security. By investing in robust cybersecurity measures, we can mitigate risks, ensure privacy, and safeguard the digital infrastructure that underpins our daily lives. Cybersecurity is essential for protecting sensitive information, preventing cyberattacks, ensuring business continuity, complying with regulations, safeguarding critical infrastructure, preserving intellectual property, and fostering user trust and confidence. By investing in cybersecurity measures, organizations can mitigate risks, maintain operational resilience, and protect themselves and their stakeholders from the growing threats of the digital landscape.

Figure 18.1: Cyber Security

19. Advancements in Artificial Intelligence: Unleashing the Potential of AI Robotics for Human Development

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Abstract:

Nowadays we are observing that the Al (Artificial Intelligence) is helping in the better development of different fields on earth Artificial Intelligence is something that has been made by humans (or artificially made) by the measures and the level of human intelligence. In the future, we will see that the Al will be able to think and work as humans evolved from our ancestors (who were apes) have evolved to fully developed human beings Similar to it, the Al evolution system (from some small robots) robots or machines are just able to perform some specific functions has been evolved to the fully developed (Advanced) AI robots that are able to perform all kinds of operations and tasks like human beings. Al robotics can also be used to help people, such as like serve the forces/military the person who had lost their body parts in battle /war, or any because it can be held by the AI

robotics function by building their parts mechanically thus, AI is very helpful for our future development.
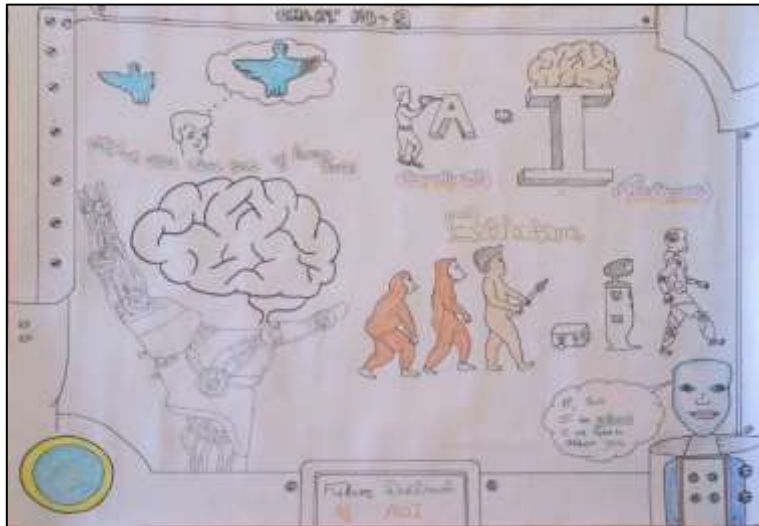

Figure 19.1: Artificial Intelligence

20. The Evolving Landscape of Artificial Intelligence: Unraveling the Constellation of Technologies and Their Impact on Business Optimization

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Abstract:

Artificial intelligence is a constellation of many different technologies working together to enable machines to sense, comprehend, act, and learn with human–like levels of intelligence Maybe that's why it seems as though everyone's definition of artificial intelligence is different. AI isn't just one thing. Technologies like machine learning and natural language processing are all part of the AI landscape. Each one is evolving along its own path and, when applied in combination with data, analytics, and automation, can help businesses achieve their goals, be it improving customer service or optimizing the supply chain.
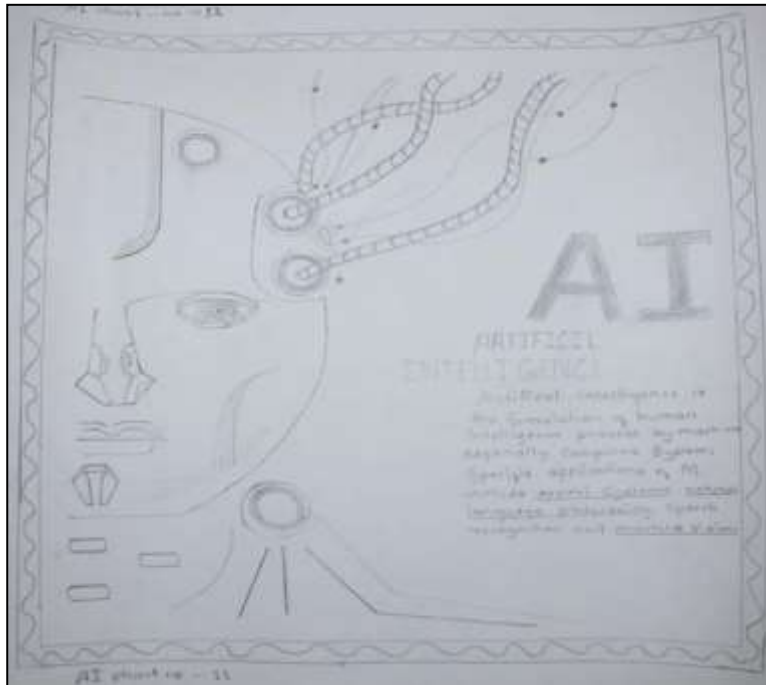
Figure 20.1: Artificial Intelligence

21. Preventing Cybercrime: Strategies and Best Practices

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Abstract:

Cybercrime has become a prevalent threat in today's interconnected world, posing significant risks to individuals, businesses, and governments alike. As technology continues to advance, the need for effective prevention measures becomes increasingly critical. This abstract explores the key strategies and best practices that can be employed to prevent cybercrime and safeguard digital environments. The abstract begins by highlighting the evolving landscape of cyber threats and the various forms of cybercrime prevalent today, including hacking, identity theft, phishing, ransomware attacks, and data breaches. It emphasizes the importance of proactive measures to mitigate these risks, focusing on prevention rather than solely relying on reactive responses. The abstract then delves into the core strategies for preventing cybercrime. It emphasizes the significance of user awareness and education, as individuals are often the

first line of defense against cyber threats. By fostering a culture of cybersecurity awareness and providing comprehensive training, individuals can become more vigilant in recognizing and reporting potential cyber threats. Furthermore, the abstract explores the vital role of robust technical defenses in preventing cybercrime. It discusses the importance of implementing up-to-date security measures, including firewalls, encryption, intrusion detection systems, and regular software updates. Employing multifactor authentication and strong, unique passwords are also highlighted as essential practices to fortify digital defenses. The abstract also addresses the significance of establishing effective organizational policies and procedures. It emphasizes the need for clear cybersecurity policies that define acceptable Nikhil Kumar Abstract Semester -2 technology usage, data handling protocols, and incident response plans. Regular audits and risk assessments are recommended to identify vulnerabilities and address them promptly. In addition to individual and organizational efforts, the abstract highlights the importance of international collaboration and cooperation. As cybercrime transcends geographical boundaries, it is essential for governments, law enforcement agencies, and cybersecurity organizations to collaborate on intelligence sharing,

legislation, and enforcement efforts. The abstract concludes by emphasizing the dynamic nature of cyber threats and the need for continuous adaptation and improvement in prevention strategies. By integrating user awareness, technical defenses, organizational policies, and international cooperation, society can work collectively toward building a resilient and secure digital ecosystem
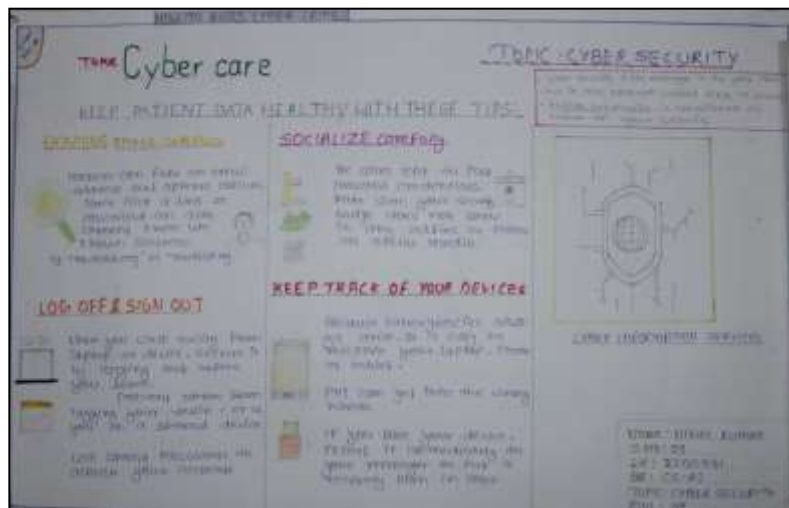

Figure 21.1: Cyber Security

22. Revolutionizing Industries: The Impact of AI in Various Sectors

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Abstract:

Deep Learning Deep learning is a machine learning technique that teaches computers to do what comes naturally to humans, to learn by example. Innumerable developers are leveraging the latest deep learning innovative technologies to take their business to the new high. Facial Recognition Artificial Intelligence has made it possible to recognize individual faces using biometric mapping. This has led to path-breaking advancements in surveillance technologies. It compares the knowledge with a database of known faces to seek out a match. Automate Simple and Repetitive Tasks AI has the ability to execute the same kind of work over and over again without breaking a sweat. To understand this feature

better, let's take the example of Siri, a voice-enabled assistant created by Apple Inc. It can handle so many commands in a single day. Data Ingestion With every passing day, the data that we are all producing is growing exponentially, which is where AI steps in. Instead of manually feeding this data, AI-enabled not just gathers this data but also analyzes it with the help of its previous experiences. Chatbots are software to provide a window for solving customer problems through either audio or textual input. Earlier the bots used to respond only to specific commands. If you say the wrong thing, I didn't know what you meant. Quantum Computing AI is helping solve complex quantum physics problems with the accuracy of supercomputers with the help of quantum neural networks. This can lead to path-breaking developments in the near future. Cloud Computing Next Artificial Intelligence characteristic is Cloud Computing. With such a huge amount of data being churned out every day, data storage in a physical form would have been a major problem. Transportation is one industry that is certainly teed up to be drastically changed by AI. Self-driving cars and AI travel planners are just a couple of facets of how we get from point-to-point B that will be influenced by AI. Even though autonomous vehicles are far from perfect, they will one day

ferry us from place to place. AI IN Manufacturing has been benefiting from AI for years. With AI-enabled robotic arms and other manufacturing bots dating back to the 1960s and 1970s, the industry has adapted well to the powers of AI. These industrial robots typically work alongside humans to perform a limited range of tasks like assembly and stacking, and predictive analysis sensors keep equipment running smoothly. AI IN HEALTHCARE It may seem unlikely, but AI healthcare is already changing the way humans interact with medical providers. Thanks to its big data analysis capabilities, AI helps identify diseases more quickly and accurately, speed up and streamline drug discovery and even monitor patients through virtual nursing assistants. AI IN EDUCATION AI in education will change the way humans of all ages learn. AI's use of machine learning, natural language processing, and facial recognition helps digitize textbooks, detect plagiarism, and gauge the emotions of students to help determine who's struggling or bored. Both presently and in the future, AI tailors the experience of learning to students' individual needs. AI IN MEDIA Journalism is harnessing AI too and will continue to benefit from it. One example can be seen in The Associated Press' use of Automated Insights, which produces thousands of earning reports stories per year. But as generative AI writing

tools, such as Chat GPT, enter the market, questions about their use in journalism abound. AI IN CUSTOMER SERVICE Most people dread getting a rob-call, but AI in customer service can provide the industry with data-driven tools that bring meaningful insights to both the customer and the provider. AI tools powering the customer service industry come in the form of chat bots and virtual assistants.
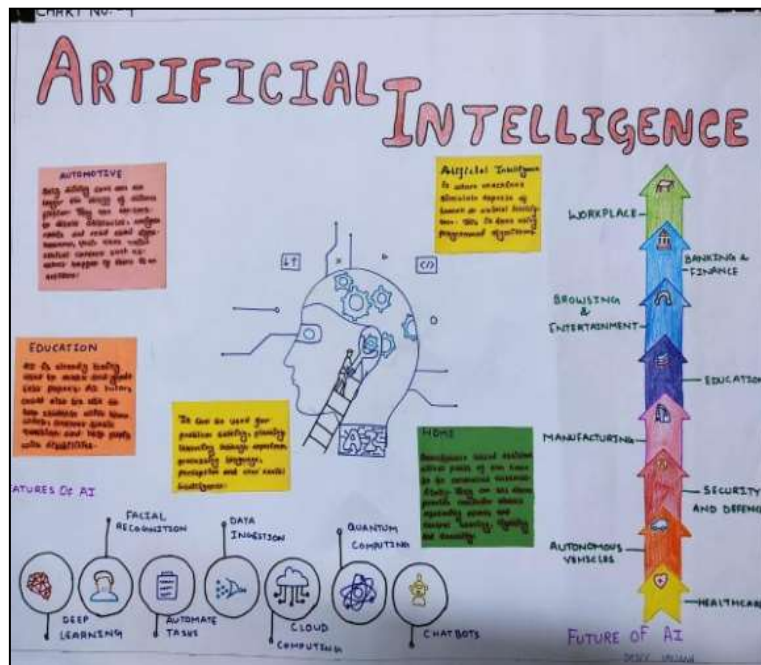

Figure 22.1: Artificial Intelligence

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