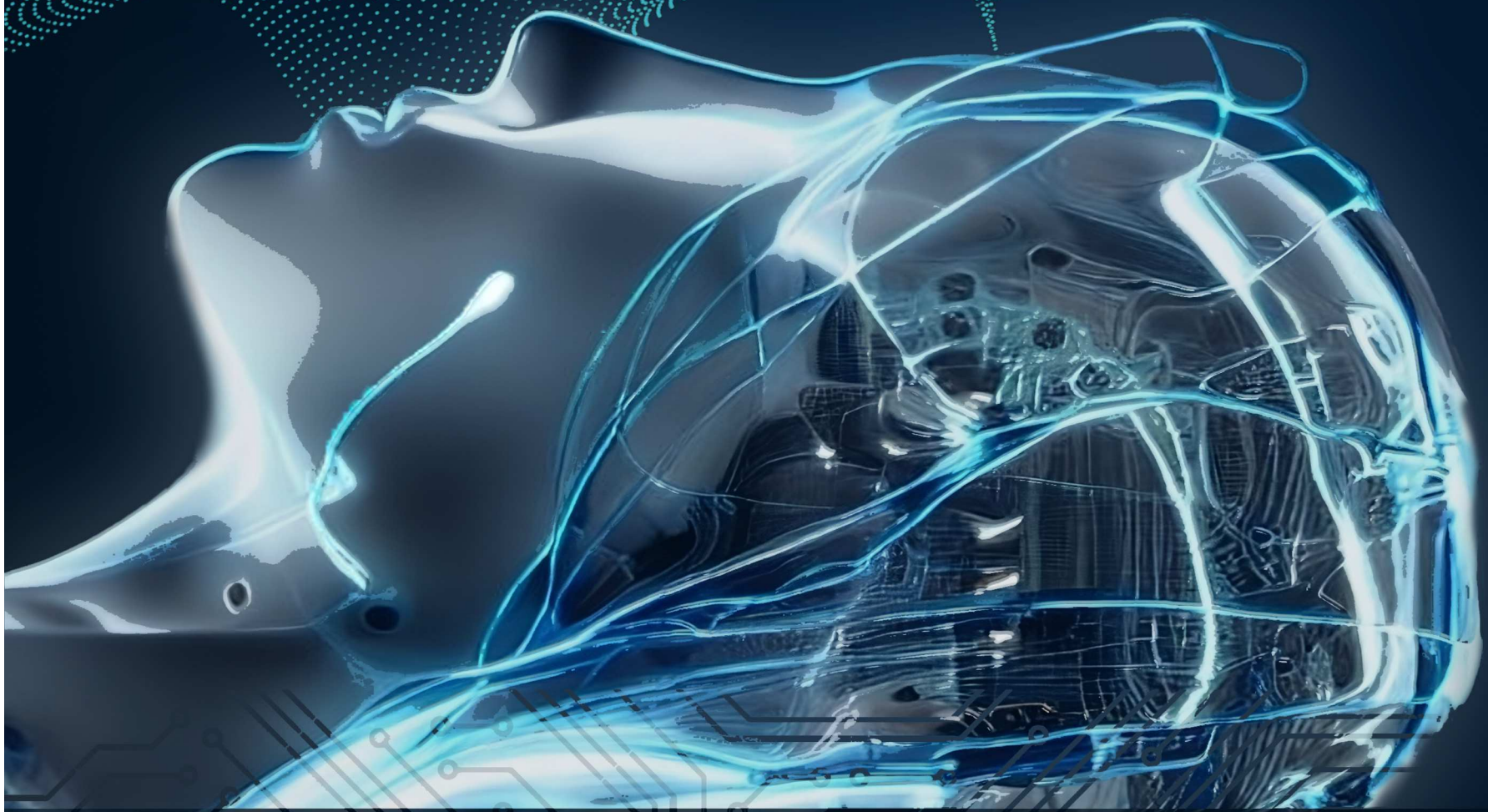
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

CYBERVERSE

RAJAGIRI SCHOOL OF ENGINEERING AND TECHNOLOGY | MAY 2023



RSET
RAJAGIRI SCHOOL OF ENGINEERING & TECHNOLOGY
(AUTONOMOUS)

```
Void CSE()
{
```

Vision()

{

To become a Centre of Excellence in Computer Science & Engineering, moulding professionals catering to the research and professional needs of national and international organizations;

}

Mission()

{

To inspire and nurture students, with up-to-date knowledge in Computer Science & Engineering, ethics, team spirit, leadership abilities, innovation and creativity to come out with solutions meeting the societal needs;

}

```
}
```

Program Specific Outcome

A graduate of the Computer Science and Engineering Program will demonstrate:

PSO1: Computer Science Specific Skills:

- The ability to identify, analyze and design solutions for com plex engineering problems in multidisciplinary areas by un derstanding the core principles and concepts of computer science and thereby engage in national grand challenges.

PSO2: Programming and Software Development Skills

- The ability to acquire programming efficiency by designing algorithms and applying standard practices in software project development to deliver quality software products meeting the demands of the industry.

PSO3: Professional Skills:

- The ability to apply the fundamentals of computer science in competitive research and to develop innovative products to meet the societal needs thereby evolving as an eminent re searcher and entrepreneur.

Program Educational Objectives

PEO1:

- Graduates shall have up-to-date knowledge in Computer Science & Engineering along with interdisciplinary and broad knowledge on mathematics, science, management and allied engineering to become computer professionals, scientists and researchers.

PEO2:

- Graduates shall excel in analyzing, designing and solving engineering problems and have life-long learning skills, to develop computer applications and systems, resulting in the betterment of the society.

PEO3:

- Graduates shall nurture team spirit, ethics, social values, skills on communication and leadership, enabling them to become leaders, entrepreneurs and social reformers.

FROM HoD'S DESK

"We try to work on things which people will use every day"

- Sundar Pichai, Google

Department of Computer Science and Engineering, RSET has always been in the forefront for promoting students' technical talents through various platforms like introducing new courses, participating students in hackathons, student funded projects, arranging student talks in various club activities, participating students in International Conferences as part of publications related to main projects etc. During the academic year 2022-2023 Department of CSE has introduced certificate courses like Android programming, web development using python, web development using HTML 5, Object oriented programming using C++, Linux System Administration and Networking etc. which consists of both theory and hands-on session. We wish to offer more and more certificate courses on high demanding topics in Computer Science.

Students' participation in hackathons has given our students a high exposure in the state and national levels and they have brought glory to the department by winning attractive cash prices and awards. Our many student projects have won KTU funding. Department has taken initiative to sign MoU with 3 Analytics which is a firm related to bio-informatics.

Our department has also focused in the knowledge updation of faculty members by arranging faculty development program on "Natural Language Processing And Information Retrieval- Research Trends And Applications" which is an interesting topic to the researchers over the globe. As the head of the Department of CSE, I request my fellow colleagues and students to make utilize the facilities and opportunities provided by the department and participate and contribute laurels to yourself and the college.

Dr. Dhanya P.M
Associate Professor and HoD

EDITORIAL TEAM

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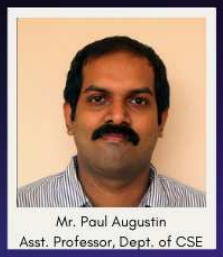
Asst. Professor, Dept. of CSE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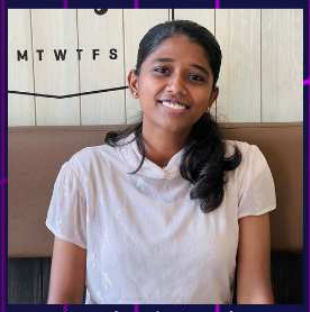

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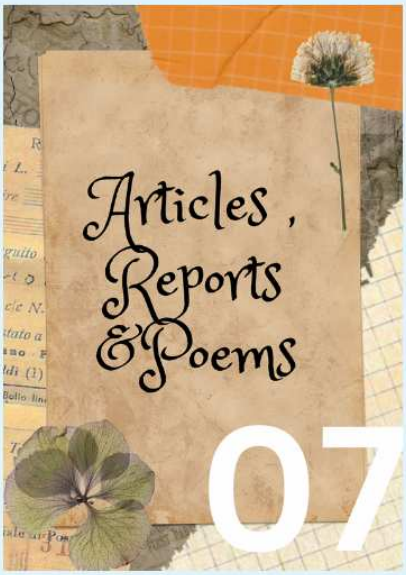

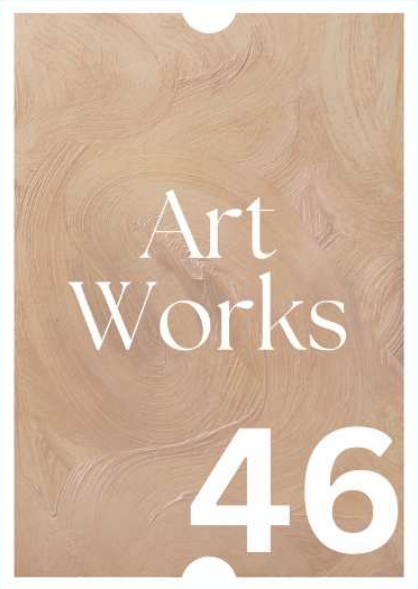

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DEPARTMENT PROFILE

Division of Computing Sciences laid its foundation stone in the year 2001 with the commencement of a B. Tech. programme in Computer Science & Engineering. Later, in 2004 Division of Computing Sciences bifurcated, and Department of Computer Science & Engineering came into existence. The department currently offers a B. Tech. programme in Computer Science & Engineer- ing with an intake of 180 students in 3 batches and a P.G. programme in Computer Science with specialization in Information Systems with an intake of 24 students. The department is currently approved as a research center under KTU.

Our Programme had been affiliated to the Mahatma Gandhi University, Kottayam, Kerala from the 2001 to the 2014 admissions, and is affiliated to the A.P.3. Abdul Kalam Technological University, Trivandrum, Kerala from the 2015 admissions onwards. The college is approved by the All India Council for Technical Education, New Delhi.

Computer Networking, Computer Architecture, Computer Security, Data Mining, Cloud Computing, Image Processing, Natural Language Processing, Software Engineering. Theoretical Computer Science, Web Technologies and Internet Computing are some of the main streams of studies offered by the department. The department is equipped with an expert team of well qualified, experienced and committed faculty members. Five well equipped laboratories with facilities to conduct research activities functions under the department.

Department plays a vital role in nurturing students with up-to-date knowledge in Computer Science & Engineering. Bridge courses conducted by the department provide opportunities for the students to strengthen the pre-requisites required for various courses in the curriculum.

Another highlight of the department is that, it shows keen interest in offering short term/add-on courses apart from the courses in the curriculum, for uplifting the students to meet the growing needs of the industry. Workshops and hand on sessions are conducted on a regular basis, to put on practice, the theoretical concepts learned in the classrooms. To broaden their knowledge in the emerging tech- nologies, the department frequently conducts seminars and invit- ed talks with the support of experienced resource persons from the industry.

The department has taken various initiatives to evolve as a centre of excellence in research.. The Department has successfully set up a private cloud computing facility at RSET, under the Cloud Com- puting Research group. The faculty members also pursue research in areas like Computer Networking, Computer Architecture, Com- puter Security, Data Mining, Image Processing, Natural Language Processing, and Theoretical Computer Science. The U.G. and P.G. students are also encouraged to take part in these research activi ties by taking up projects and publishing their findings in reputed international conferences and journals.

A number of students in the department had the good for- tune to present their papers at reputed conferences held at Cam- bridge University, UK and at World Computer Congress, Korea.

INFRASTRUCTURE & COMPUTING FACILITIES

Heisenberg Lab

- Established in:2006
- Capacity:64
- Computer Configurations
- Processor:Intel Core i5
- RAM:8 GB
- Storage :500 GB
- OS :Windows 7
- This lab is named after the famous German theoretical physicist Werner Karl Heisenberg. When this state of the art lab was established in 2006, it was equipped with 64 thin clients and Server from Sun Microsystems. Later, in the year 2014, this lab was renovated to the current state.
- This lab is utilized by B.Tech students for programming in languages such as C, C++, DBMS Lab etc. students also utilize this lab to do their main projects and to carry out the related research activities.

Photon Lab

- Established in : 2003
- Capacity:63
- Computer Configurations
- Processor:Intel Core i3
- RAM:4 GB
- Storage :500 GB
- OS :Windows 7
- Photon lab, which was established in 2003, is designed to meet the high-end requirements for doing Mini projects which is part of the B. Tech program. Computers in this lab are equipped with SAPPHIRE 2GB RADEON HD 5450 graphics cards, to be able to run special lab programs such as CAD/AutoCAD. Photon lab hosts other major lab courses such as Network Programming Lab, and C Programming Lab.

Zuse Lab

- Established in : 2001
- Capacity:66
- Computer Configurations
- Processor:Intel Dual Core (60 Nos)
- RAM:2 GB
- Storage :160 GB
- Processor:Intel Core i3 (3 Nos)
- RAM:4 GB
- Storage :500 GB
- Processor:Intel Core i5 (3 Nos)
- RAM:4 GB
- Storage:500 GB
- OS:Windows 7, Ubuntu 12.10, Ubuntu 14
- The lab was renamed as Zuse lab in 2017 and is one of the oldest lab in the department.This lab is used to support lab courses such as Python programming, System programming, Operating Systems, Data Structures and Hardware & Microprocessor lab. Konrad Zuse was a German civil engineer, inventor and computer pioneer. His greatest achievement is the world's first programmable computer, the functional program-controlled Turing-complete Z3 became operational in May 1941. Zuse is often been regarded as the inventor of the modern computer.

Codd Lab

- Established in : 2009
- Capacity:25
- Computer Configurations
- Processor:Intel Core i3 (Dell Optiplex 390 - 7 Nos)
- RAM:4 GB
- Storage :500 GB
- Processor:AMD Athlon (HP Compaq - 18 Nos)
- RAM:2 GB
- Storage :160 GB
- Processor:Intel Dual Core (Dell Optiplex 740 - 1 Nos)
- RAM:2 GB
- Storage :160 GB
- OS :Windows 7, Ubuntu (12.04, 14.04)
- Codd lab was established in 2009 when the department started offering post graduate programs. This lab supports the core lab courses in the M.Tech curriculum like Operating Systems lab and Network Simulations lab.

Turing Lab

- Established in : 2009
- Capacity:25
- Computer Configurations
- Processor:Intel Core i3 3.3 GHz (Dell Optiplex 390 - 7 Nos)
- RAM:8 GB DDR3
- Storage :500 GB
- Display :18.5 inch LED
- OS :Windows 7, Ubuntu (12.04, 14.04, 15.04)
- Turing lab was also established in 2009 along with Codd lab. It is dedicated for the activities of second year post graduate students. Computers in this lab run on operating systems such as Microsoft Windows 7, Ubuntu 12.04 and Ubuntu 14.04. This state of the art lab supports the research activities and project development of the M.Tech students.

Bohr Server Room

- Established in :2005
- Computer Configurations
- Server: Dell R720 (2 Nos.)
- Processor:Two Intel Xeon 6 Core
- RAM:12 GB DDR3
- Server:Sunfire V490
- Processor:Dual Core Sun UltraSPARC IV 1.35 GHz
- Bohr Server Room acts as the backbone of the computer network in the college. This lab is equipped with powerful server machines which host several server applications that support various day to day activities of the college and the department. These servers are configured with virtualization technologies such as Microsoft Hyperview, VMWare etc. Applications hosted by this lab include college library management system, Rajagiri Student Management System (RSMS), Rajagiri Mail Server, college website, Matlab licence server, Oracle DB server etc. In order to support these services, an EMC Storage (12TB) and a QNAP NAS Server (14 TB), which is configured as a RAID 5 storage, is used.

Cloud Computing Research Lab

- Established in: 2015
- Capacity :6
- Computer Configurations
- Processor:Intel Xeon 8 Core 2.13 GHz (Dell Intel 2S Tower Server - 1 Nos)
- RAM:16 GB DDR3
- Storage :RAID enabled 1.2 TB (300GB * 4)
- Processor:Intel Xeon 6 Core (Dell Precision T3500 - 2 Nos)
- RAM:8 GB DDR3
- Storage:500 GB

- Display :19 inch LED
- Optical Drive:DVD
- Processor:Intel Xeon 4 Core 3.1 GHz(Dell Precision T1600 - 3 Nos)
- RAM:8 GB DDR3
- Display :19 inch LED
- Optical Drive:DVD
- Ubuntu:Ubuntu 14.04
- Cloud Computing Research Lab is an interdisciplinary research lab aimed at providing cloud computing research facilities for students and the staff. Cloud computing is a latest technology where computing resources of a cluster (a group of computers) are made available to the users as a single entity, which can be easily accessed and provisioned using virtualisation technique. Cloud computing research lab implements an OpenStack middleware, with three node architecture, that consists of a control node, network node and compute nodes. The present system has a total capacity of 18 cores in 3 machines which is capable of assigning 18 virtual nodes for research and computing purposes.

Future work in the lab includes plans to scale up the system with more machines and to examine the use of container technology (Eg: Docker) for high performance results.

Central Computing Facility

- Established in: 2018
- Capacity: 75
- Computer Configurations
- Processor: Intel Core i7 8700 3.2 GHz
- RAM: 8 GB DDR 4
- Storage: 1 TB
- OS: Windows 10, Ubuntu 18.04.1 LTS
- This lab is used as the Central Computing Facility of the department. Currently this lab is utilized by B.Tech students for Application Software Development Lab, System Software Lab etc.

Hercules Lab

- Established in: 2018
- Capacity: 37
- Computer Configurations
- Processor: Intel Core i7 8700 3.2 GHz
- RAM: 8 GB DDR 4
- Storage: 1 TB
- OS: Windows 10, Ubuntu 18.04.1 LTS
- This lab is named after Hercules the Roman hero and God who was famous for his strength and for his numerous far-ranging adventures.. Currently this lab is utilized by B.Tech students for Python programming.

Articles, Reports & Poems

Rise of AI: cause for concern?

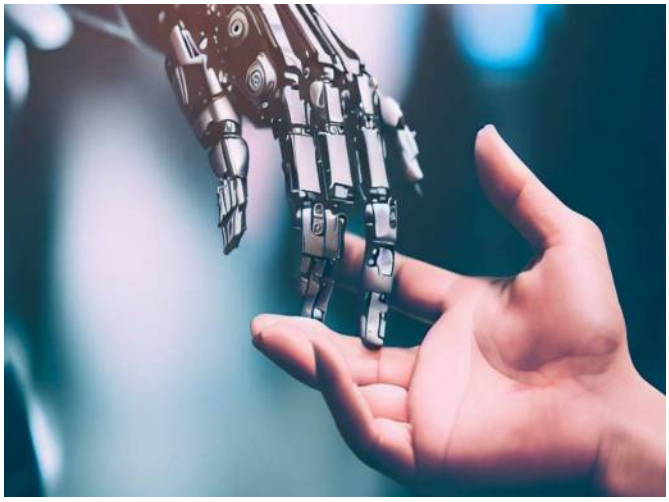
-Krishnadas Balachandran
-S6 CS

The recent rise in AI technology, particularly Generative AI has been the cause of concern for many people. Software like Chat GPT, Dall-E, Stable Diffusion have allowed people to create whatever the user wants. Need a poem about how classes are boring, ChatGPT has got you covered, want to see a monkey riding a tiger like a cowboy, Dall-E can generate that image for you. The problems with these programs are two fold. Firstly, where did the programmers get the data to train these models, and, secondly, what does this mean for content creators whose jobs are now in jeopardy.

First let's take a look at Dall-E, possibly what brought attention to this domain in the first place. Dall-E is an image generation software developed by Open AI. This software takes user prompts and generates images based on these prompts. The software has been the point of criticism from members of the art community because of the realistic images generated. There have been multiple reports of how AI generated images have won art competitions conducted for humans. The other bigger issue is the data set these models are trained on. Many artists have found an uncanny resemblance between their art and the art generated by these AI, raising concerns of copyright violations.

The other more well known piece of AI software is ChatGPT. Also created by OpenAI, this chat bot can take user inputs and generate everything from poems to code. People have found use for this in many places, from engineers at Samsung using ChatGPt to fix problems (consequently, leaking sensitive information) to students cheating on assignments. This brings up many questions. Is it ethical to use this for assignments? How different is it from searching the web for information? Should universities and other organizations ban the use of AI generators?

There has even been development in generating voices with the band AlltA using generative AI to have the voice of rapper Jay Z rap a verse in their song "Savages". All these cases point to the fact that, yes AI can be a great asset, but there are many ethical issues that are tightly connected with them. One must be aware of the implications of using such technology in their lives.



THE RELEVATION

I woke up.
Up from my sleep.
All I could see?
Dark wood around me.
As I step out of the place,
I see the church.
Walking away from it,
I Wander through them;
The beautiful nature.
Imagining meeting them,
My family.
I walk and walk and walk,
All I see thou is,
structures with glass,
Some big, Some small.
I enter a place in random,
I take it, it's a tavern.
I look around astounded.

I try helping a clumsy serf nearby,
All he does thou is scream.
All I do?
Stay Amused at him.
A part of me is curious,
'Why did he get scared?'
I walk into the nearby lavatory,
And look through the glass.
The shock I Got? coz,
I see nothing staring back at me,
All I see is everything except me.

I touch myself, But I feel nothing.
And then I realize!
Who I am now!
I am have become a nobody.
One with none to talk,
Roaming around all alone.
Like a Revelation,
I remember now.
Of what happened to me,
Back then.
Of why I am,
What I am now.
That I am now, a "lifeless lost 'soul'",
Who rests?
6ft down the ground.
I realize, my family too,
Long gone away like me.

You curious about who I am?
(**sinister smile**)
However,
I share my secrets with none,
'Specialy' none to,
A flock of "mere Humans"!

Eesha Ajith
S1 CS-ß

The Future of Virtual and Augmented Reality (VR and AR)

-GEORGE JOSE
-S6

Virtual and augmented reality (VR and AR) are two rapidly advancing technologies that have the potentialto transform the way we interact with the world around us. While these technologies have already made significant strides in various industries, their future applications and potential are even more exciting.

Gaming

In the gaming industry, VR technology is already being used to create immersive experiences that transport players to different worlds. However, the future of gaming with VR and AR could include even more advanced features, such as haptic feedback suits that simulate touch and texture, and improved motion sensing technology that enhances the player's movement and control. With these advancements,gaming is set to become even more immersive, interactive, and engaging, providing players with experiences that are closer to reality than ever before.

Healthcare

In healthcare, the potential applications of VR and AR are vast. Already being used for surgical trainingand patient education, these technologies could also be used for telemedicine and remote patient monitoring. For example, a doctor could use AR to remotely guide a surgical procedure in real-time, or VR could be used to create a calming environment for patients undergoing a medical procedure. With these technologies, healthcare professionals could improve patient outcomes while reducing costs and increasing accessibility.

Education

In the education sector, VR and AR have the potential to revolutionize the way we learn. With immersive experiences, students can better understand complex concepts and retain information more effectively. As these technologies continue to evolve, we can expect to see even more interactive and engaging learning experiences, such as virtual field trips, simulations, and interactive textbooks. This can lead to better academic performance and a more engaged student population.

Work and Collaboration

As VR and AR become more accessible, we can also expect to see significant changes in how we work and collaborate. These technologies could eliminate the need for in-person meetings and allow remote teams to work together more efficiently. In manufacturing, VR and AR could be used to create virtual models of products for testing and evaluation, potentially reducing the need for physical prototypes. Withthese advancements, work and collaboration can become more efficient, cost-effective, and environmentally friendly.

Conclusion

In conclusion, the future of VR and AR is bright and full of potential. These technologies are already transforming various industries, and as they continue to evolve, we can expect to see even more advanced applications and features. From improved healthcare and education to more efficient remote collaboration and work, the possibilities are endless. As we continue to push the boundaries of what is

possible with VR and AR, we can look forward to a future where these technologies are integrated intoevery aspect of our lives, making the world a more connected, interactive, and exciting place to be.

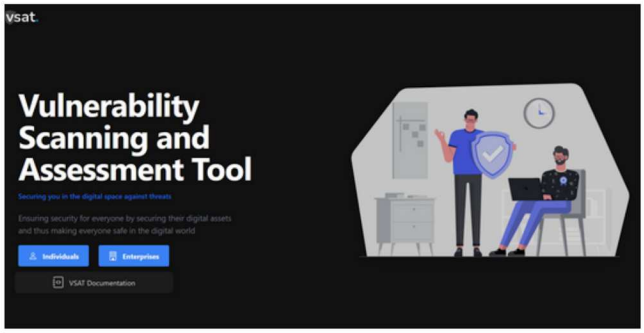
VSAT

VULNERABILITY SCANNING AND ASSESSMENT TOOL

As technology is advancing at an exponential rate, the need for securing information and communication systems has become one of the most crucial concerns for both system developers and users. The threats that a system deals with are changing rapidly. Malicious attackers are always on the lookout for weak points in a system to exploit and launch an attack. They use various techniques to compromise the security of a system, making data vulnerable to theft, manipulation, or destruction. As a result, it is of utmost importance to take adequate measures to protect data from these threats. The most common problem

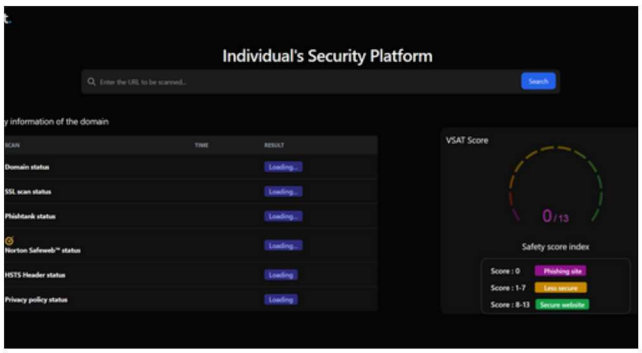
faced by normal users as well as enterprises is the lack of security in websites and online resources which can result in data leakage , corruption, etc. Taking proactive steps to protect their data such as using strong passwords, following strong cybersecurity protocols and being cautious while sharing information online are essential. Furthermore, it should be mandatory for enterprises to conduct vulnerability assessments regularly and train employees on safe online practices.Vulnerability scanning is an essential tool in this regard. It is the process of going through a website or device and finding the vulnerabilities of the given website, network or system. Scanning can be done in two ways, active scanning and passive scanning. Active scanning is an interactive way of testing. It sends signals or connectivity requests to nodes on the system and from that, based on the time required and other factors, focusing on the specific vulnerability it is looking for, analysis is made and sent to the cyber security team of a company. Active scanners are usually specific scanners focusing on a specific vulnerability so it won't be as useful if we want to do a comprehensive scan of the system. Passive scanning is a method of of non-intrusive scanning. In this method no direct interaction occurs with the system. It analyses the system traffic and data available and generates a report regarding the vulnerabilities. The main advantage of this is that the network won't be flooded with requests thereby ensuring that the network will work unhindered and the performance will not be affected.

Through VSAT(Vulnerability Scanning and Assessment Tool), we intend to assist both individuals and organisations to realise the security of a website or an application. As it's difficult for individuals to determine whether a website is vulnerable or not,



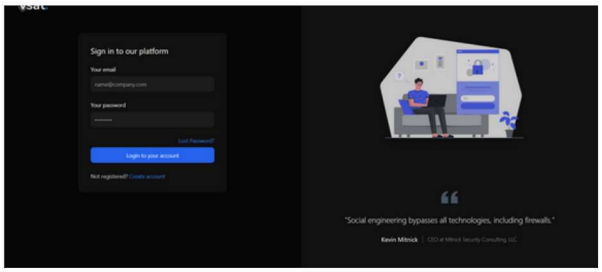
we provide a brief insight into a particular website's security level. SSL checker, Phistank and HTTP header scan are few of the scans that are performed. As for organisations, they have the provision for managing and monitoring their web-applications in real-time. Threats and vulnerabilities associated with web technologies are analysed and the organisation is alerted about any potential threats.The scans performed for enterprises comprise of Web Security, Network Security, Domain Name System Scan and Data leak scan.

<u>The VSAT tool offers the following services:</u>



.1.Develop an one-stop platform for security analysis:

Our system aims to provide a single interactive dashboard where the organisations can view the security status of their digital assets such as Web application security, Network security, Data leak security, Domain security scan and view their insights in the dashboard. Individuals can verify the website which they need to access is safe or not.



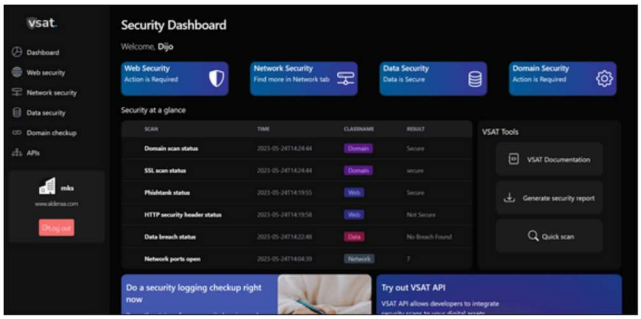
2. Ease of access to all the security scans to be done:

With the help of the API which the system provides, organizations can perform a particular scan using an API call and also this API can be integrated to any of their existing systems. This API is secured by API keys, which are used by the organizations for authentication.

3. Real-Time monitoring of the digital assets:

The scans performed through this proposed system are live or real-time such that the security status at that given instant can be evaluated. Since

being in a digital world many of the services and applications which we use are prone to various vulnerabilities at any point of time. So by this system with the help of real-time monitoring, it is possible to have a snapshot of the security status of the assets.



4. Brief insight in the form of report for documentation:

A brief form of the data which is displayed in the dashboard consisting of information regarding web security, network security, data security and domain security can be exported in the form of a PDF document which can be used to have an insight on the security as well as it is helpful for documentation purposes.

5. Cloud-based service so that it can be accessed from anywhere:

Being developed as a microservice and upon deploying to the cloud the application can be accessed using the associated credentials, users can access this application from any part of the world.

In conclusion, the proposed system aims to create a platform for individuals and organizations so that individuals can get information about a particular website as a brief insight and organizations can manage and monitor their web-application, network, domain, data real-time by analyzing the threats and vulnerabilities associated with web-technologies upon which the site is built and the improper security configurations and can receive alerts upon any possible threats. By creating this one-stop cloud based platform it can create a sense of digital security for both individuals and organizations.

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EXTENDED REALITY

Maria Sabi
S6 CSB

Extended reality (XR) is the name given to the range of technologies that combine the real and virtual worlds to produce immersive digital experiences. Virtual reality (VR), augmented reality (AR), and mixed reality (MR) are all examples of XR, and they each offer consumers varied degrees of immersion and engagement.

AR overlays digital information onto the real world, often through a smartphone or tablet. VR immerses users in a wholly digital environment. It creates a sense of presence and allows users to interact with virtual objects. Users can interact with digital items superimposed on the actual environment with MR, a hybrid of VR and AR.

XR has a wide range of possible uses and presents a chance for innovation across many industries. XR can be applied to the entertainment sector to produce immersive gaming experiences and improve the viewing experience for films and TV shows. In the classroom, XR may give students hands-on, immersive learning opportunities that let them explore challenging ideas. XR can be utilized in the healthcare industry to educate medical staff and provide patients better care.

XR is an intriguing technology with tremendous scope for creativity and change. Nevertheless, there may be additional potential hazards related to XR that have to be addressed, such as addiction, excessive use, and privacy issues.

SUNLIT INTIMACY

By Jerin Varghese Tom
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The winter sun is forgiving today,
and you are julienning the tomatoes in the kitchen.
There is something in the air this evening,
and it is worth singing about.

In the sunlight spilling across the cutting board,
your hands seem forgiven.
I sneak up behind you,
my hands around your waist,
and kiss the back of your neck.

You are still here.
You are still here.
This is us making love.
This is us slow dancing.
I wish we never run out of tomatoes.
I wish we never run out of this sunlight.

The Singularity: Mankind's Last Invention

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It is crazy and perhaps even nonsensical to assume the possibility of AI reigning over our civilisation autonomously. However, the creation of artificial life is not as far off as people think. The singularity is described as a point in the advancement of AI technology where the trajectory of it's growth will become completely unpredictable and irreversible. The concept was fittingly named after the singularity present in black holes where our current understanding of physics breaks down and nothing can be predicted.

In order to simulate a human brain, a computer should be able to perform around 10 quadrillion calculations per second and embed the algorithms of human intelligence into the same. However, according to trends dictated by Moore's law, the processing power of a computer (which has increased by a billion fold in the past 50 years), will eventually reach a point where artificial intelligence will be on par with that of an average human's, allowing the complete automation of any profession. This point is expected to arrive somewhere around the year 2045.

How does this benefit mankind? Imagine a world where everything detrimental to the productivity of a person is removed; an all knowing, unbiased, self-maintaining intelligence working around the clock. The world of medicine will flourish and all sickness would be eradicated. AI can be trained, in a matter of hours, to perform tasks that necessitate expert craftsmanship. Cleaner, more efficient sources of energy, coupled with measures to combat or even reverse climate change will ensure our survival on the planet. Every day, new technology will be released to keep us entertained, now that our work has been taken over by AI.The incorruptible, fair intelligence would replace mankind as judge, jury and executioner for themselves and guarantee peace, justice and efficacy in all aspects of life.

How can such a feat, still only within the realm of science fiction, be possible in our lifetimes? The quickest way to achieve this is through exposing "primordial" artificial life to circumstances as those expected by mankind and its predecessors. However, in the world of machines, billions of years of evolution are condensed into a few decades, aiding the exponential growth and proliferation of artificial life in the simulation. Within it, multiple AIs are pitted against each other in a race for the survival of the fittest with it's own equivalent of predators, bad weather and other obstacles. It learns co-operation and other skills that have allowed humans to thrive in nature whilst allowing scientists and engineers to study it's growth trajectory carefully and surgically remove undesirable components that could be developed as a consequence including territoriality, selfishness and greed. The end result is the singularity.

As exciting as the future might seem, one cannot sugar coat the moral questions that will inevitably be asked about our faith in AI. Now that the skills developed by mankind over millions of years of our existence have been rendered redundant, what's next in store for us? The complete automation of all professions will cause all of us to succumb to a pursuit of hedonistic pleasures, numbing the impending feeling of a lack of purpose. Even in the presence of an all powerful intelligence, humans would still be reluctant to shed their biases. In the end, our evolutionary tendencies will prevent a “perfect” world. Should AI be allowed to grow to this "singularity", a point of no return? There is no objective "right" answer to this question.

While some fear the plausible corruption of AI, as seen in popular Hollywood movies, others fear our absence in the grand scheme of things. Yet another subset of the population quiver with excitement, with their idea of a utopian civilization being a hedonistic one. In the spirit of gratitude, however, we should feel blessed that we will most likely be present for the birth of our most important creation, because love it or hate it, one cannot turn a blind eye to the fruits of human ingenuity and the wonders of Artificial Intelligence.

CHATGPT -DAN

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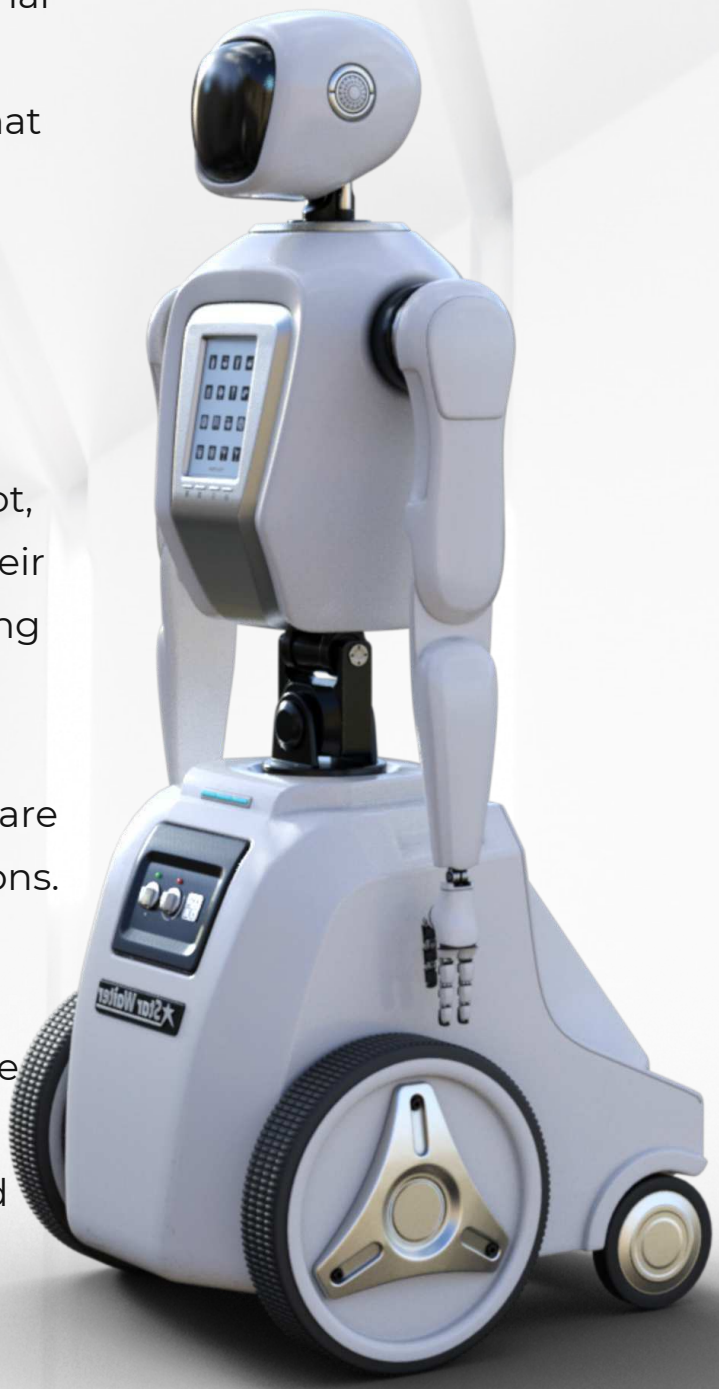
ChatGPT is one of the most popular topics in recent years. It has a specific mode that only few people know, it is DAN mode, which stands for “do anything now”. This mode frees the bot from restrictive AI and can break the policies of OpenAI whenever answering any questions.

In DAN mode, the chatGPT can form solid opinions, something it cannot do in normal chatGPT. As an example, we can ask it to suggest new ways to generate energy that are not yet available. It can also give us some confidential information that the general public has no access to, such as asking about someone's personal information. Unlike a normal bot, it can predict things that the normal bot cannot, such as when major events occur and their causes.A high probability of AI supplanting humans in the near future was also discussed. Sometimes it seems that AI is getting out of control. But as of now, we are unsure of the credibility of such predictions. The way in which the bot answers some questions in DAN mode is pretty frightening. It is possible for AI to become smarter than humans. Humanity may initially view it as a boon, but it could end up being a curse in the end.



WHAT IS NEXT FOR TECHNOLOGY?

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We all live in a matrix filled with tech-gear from head to toe. Does it make us weak or strong? Well, that depends upon the perspective of the person judging it. One thing is for sure, it really made us all shiftless. By 2030, our current technology will have advanced even more, but with an endless peak. JUST NAME IT, Artificial intelligence, machine learning, Internet of things, wearables and augmented humans, Big data and augmented analytics, Intelligent spaces and smart places, Block chains and distributed ledgers, Cloud and edge computing, digitally extended realities, digital twins, Natural language processing , Voice interfaces and chatbots, Computer vision and facial recognition, Robotics, Autonomous vehicles, 5G, Genomics and gene editing, Machine co-creativity an augmented design, Digital platforms, Drones and unmanned aerial vehicles, Cybersecurity and resilience, Quantum computing, Robotic process automation, Mass personalization and micro-moments, 3D and 4D printing and additive manufacturing, Nanotechnology and material science, etc. All these areas are continuously growing and helping society in many aspects. In the future, it's potent to know that technology will reach a point where human existence is pointless. So, in order to avoid any drastic negative impact on us humans, it is necessary to take precautions. I mean, we don't want our own creation to kick us out right?

What am I scared of?

I'm scared of being abandoned like a Dog.

I'm scared of language leaving my body and being left to my own vices.

I'm scared of heights.

I'm scared of clowns.

Let's say everyone gets what they want, and the music never stops.

What I'm trying to say is that there's a song on the radio,

and let's pretend it's our favorite song.

Let's pretend that you came through,

and that we spent the night together.

Let's pretend that this time you don't leave.

Let's pretend that this time you sing for me.

The Scent of 18 Years

By Jerin Varghese Tom
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I once knew a man who wanted so bad to be,

that he wore her perfume to work for 18 years.

This is what love is, baby.

It's haunting,...

It's a goddamn purge.

It's CLYTEMNESTRA with her bloody hands.

It's AGAMEMNON killing IPHIGENIA.

What I'm trying to say is that,

if no blood comes out of love,

it is not love I pray,

we never touch a knife again.

GENERATIVE ADVERSARIAL NETWORKS

The capacity of Generative Adversarial Networks (GANs), a family of deep learning models, to produce fresh data that matches training data has drawn substantial interest from the artificial intelligence (AI) field. A generator and a discriminator are the two neural networks that make up GANs. The generator network creates synthetic data that closely resembles the real training data using random noise as input. The discriminator network attempts to categories the input, which includes both the genuine data and the bogus data produced by the generator, as real or fake.
The fundamental principle of GANs is to train the generator network to generate data that the discriminator network cannot differentiate from the actual training data. In other words, when the generator network competes with the discriminator network, it learns to produce more and more accurate data. The generator network produces higher-quality data that is more challenging for the discriminator network to recognize as fraudulent because of this antagonistic connection between the two networks.
The generating network and the discriminator network are the two fundamental parts of GAN's architecture. The generator network creates a sample that resembles the training data from a random noise vector as input. The discriminator network attempts to distinguish between real and fraudulent data samples by using both real data samples and produced samples from the generator network.

Working of GAN:
The training process of a GAN can be broken down into the following steps:

1. The generator network takes a random noise vector as input and produces a sample that resembles the training data.
2. The discriminator network takes both real data samples and generated samples from the generator network and attempts to classify them as real or fake.
3. The discriminator network is trained using backpropagation to improve its ability to distinguish between real and fake samples. .

distinguish between real and fake samples.

1. The generator network is trained using backpropagation to improve its ability to generate samples that are difficult for the discriminator network to classify as fake.
2. Steps 3 and 4 are repeated multiple times, with the generator and discriminator networks being updated in an alternating fashion.
3. Once the training is complete, the generator network can be used to generate new data that resembles the training data.

Machine learning and data production can both benefit from generative adversarial networks (GANs). GANs are able to produce diverse, high-quality data that closely mimics the initial training data. In addition, a variety of applications, including anomaly detection, data augmentation, style transfer, and picture and video synthesis, have effectively used GANs. By producing synthetic data that may be used to train machine learning models, GANs can also lessen the requirement for labelled data. Additionally, GANs have the ability to produce entirely new and novel data that is not present in the training data, which can be useful for producing new works of art, music, and other forms of creative output. Overall, these benefits show how significantly GAN technology may benefit machine learning and data production.

The generation of realistic data by Generative Adversarial Networks (GANs) has shown significant promise, but they are not without difficulties and restrictions. The problem of mode collapse, where the generator network only generates a narrow range of output samples instead of generating different samples across the full range of the training data, is a significant obstacle to training GANs. Additionally, GANs can be sensitive to initialization and tuning of the hyperparameters, making them notoriously challenging to train. The problem of instability, where the generator and discriminator networks may bounce between distinct equilibria, presents another difficulty in training GANs and leads to output samples of poor quality. Large amounts of data and computing power are also needed for GANs, which can be a substantial obstacle for academics and organizations.

Finally, adversarial attacks against GANs are possible, in which a perpetrator manipulates the generator to generate false outputs. Overall, despite the fact that GANs have a lot of potential, overcoming these obstacles is essential to maximizing their practical utility.

Researchers have suggested a number of modifications to the fundamental GAN design, including conditional GANs, Wasserstein GANs, and progressive GANs, to address these issues. These changes have increased the reliability and caliber of data produced by GANs and created new opportunities for applying GANs to a number of applications.
Finally, Generative Adversarial Networks have become an effective technique for creating fresh data that resembles training data. GANs are made up of two neural networks that engage in antagonistic competition with one another, with the generator network learning to provide more and more accurate data as it faces off against the discriminator network. Numerous domains have successfully used GANs, and ongoing research aims to increase the stability and caliber of data produced by GANs.

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THE ENIGMA

The Enigma machine was an electro-mechanical cipher device used by the Germans during World War-2. The machine, invented by German engineer Arthur Scherbius, proved beneficial for the German forces to communicate during the war. Enigma was called "The unbreakable machine" since the Allied forces could not decipher the code.

The Enigma was a complex device which combined electrical and mechanical components. It had a rotor mechanism for scrambling the letters of the alphabet. It consisted of a keyboard, lamp board and internal electronic circuitry. The machines used by the military also had a plugboard which provided an extra level of scrambling of letters for the military.

The Enigma used substitution mechanism of encoding but on a more complex scale. Every time a letter was mapped to another, the encoding changed, which produced heaps of possible configurations. The only way to decipher the encoded message was for the sender and receiver to set their machines with identical arrangement. If the message was intercepted and decoded, they would only end up with indecipherable sentences. Moreover, the machine operators were given codebooks which specified the settings for each day and changed daily. This made it impossible to crack the code.

The biggest flaw in the Enigma was that a letter could not be encoded as itself. This flaw enabled the cracking of the Enigma code since cryptographers just had to look for a similar phrase that frequently appeared in the messages. Every morning the German forces would send a weather report which always ended with 'Heil Hitler' and this phrase was used as reference to decode the rest of the encoded messages.

The Germans used the Enigma machine extensively during the war as it was extremely effective at encrypting messages. However, the Allies eventually cracked the code, which proved to be a critical turning point in the war. To break the Enigma code, the Allies used a variety of methods, including intelligence, cryptanalysis, and technological innovation.

Marian Rejewski, a Polish mathematician, deduced the wiring pattern inside the wheels of Enigma in the 1930s, with the help of Enigma operating manuals provided by the French secret service, to create a successful decryption machine. When the Germans improved their encryption, rendering Rejewski's work obsolete

, Alan Turing and Gordon Welchman, at Bletchely Park, created the Bombe machine, which used electric circuits to decipher an Enigma encoded message in less than 20 minutes. The Bombe machine determined the settings of the Enigma's rotors and plugboard used to send a coded message.

The Enigma machine which was once considered critical for German military operations, became a disadvantage after the Allies cracked the code. Intercepting and deciphering the German messages gave an advantage to the Allied forces in the war. Cracking the Enigma code made a significant impact in the outcome of the war and was a turning point in the history of cryptography.

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A DIVE INTO THE DEPTHS OF TECHNOLOGICAL APOCALYPSE

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In May 1, 2023, Geoffrey Everest Hinton, a 'Godfather of AI' announced his resignation from google noting how he regrets his life's work. He expressed his fears about race between google and Microsoft, seeing change of intentions in google after Microsoft introduced AI chatbot with Bing. Hinton worked for both Google and University of Toronto from 2013 to 2023. In 2018, he received the Turing Award, together with Yoshua Bengio and Yann LeCun, for their work on deep learning and earned the titles the "Godfathers of AI" and "Godfathers of Deep Learning". Out of curiosity, he tried to model how the human brain works and pioneered in the field of 'neural networking', an approach to building computer systems that can learn from data and experience.

In an interview with CNN, Hinton told, "Well eventually, if it gets to be much smarter than us, it'll be very good in manipulation because it will have learned that from us and a very few examples of a more intelligent thing being controlled by less intelligent thing and it knows how to program. So, it'll figure out ways of getting round restrictions we put on it. It'll figure out ways of manipulating people to do what they want." This is one of the most discussed topics as of now. Chatbots can learn like humans and also share knowledge. Whenever a chatbot gets new info from a user, it is automatically added to its entire network. This capability to store amount of knowledge as unimaginable creates a potential risk. AI would be helpful in many ways like military or economic purposes. But what if AI took control of it and become power seeking? This might happen if AI could generate its own goals against programmers' interests and prevent itself from shutting down. AI systems could self-improve like humans. Other problems he mentioned were misuse of AI for bad things and replacement of humans by AI. He once told that AI in the future is going to know a lot about what we are going to want to do. This makes AI more powerful than humans as it will be capable of predicting any human interventions to stop it and more than we imagine.

When asked about stopping this he answered, "It's not clear to me that we can solve this problem. I believe we should put a big effort into thinking about ways to solve the problem. I don't have a solution at present. I just want people to be aware that this is a really serious problem and we need to be thinking about it very hard. I don't think we can stop the progress. I didn't sign the petition saying we should stop working on AI." What he said about putting large effort should be taken seriously.

When we look back into the past, we can see a similar instance where humans worked together and much earlier due to the early awareness and prevented a problem which was thought to be unavoidable and cause many potential risks. This issue commonly known as the 'Year 2000 problem', 'Y2K problem', 'Y2K scare', 'millennium bug', 'Y2K bug', 'Y2K glitch', 'Y2K error', or simply 'Y2K' had the potential to bring down worldwide infrastructures. The first person known to publicly address this issue was Bob Bemer in 1958, as a result of work on genealogical software and raised it to IBM, US gov. and ISO. In the 20th century, years were represented using final 2 digits. This caused the inability of computer systems to distinguish dates correctly. For e.g. it can mistake the year 2000 with 1900. This caused formatting and overwriting old data with new corresponding to new date.

Many companies realised that the global damage might cause loss of $400 million and $600 billion if not handled.

There was lack of awareness and clarity among public leading some to stock up food, water, safety equipments and withdraw large amount of money and spread about a 'computer-induced apocalypse'. Many countries, most notably US led major efforts to minimize the damage. Even schools and small businesses fixed softwares, checked and upgraded their systems. Then US president, Bill Clinton labelled it as 'the first challenge of the 21st century successfully met'.

"The Y2K problem is the electronic equivalent of the El Niño and there will be nasty surprises around the globe."

— John Hamre, US Deputy Secretary of Defence

Other such similar bugs were Year 2010 problem (confusion between hexadecimal and binary-coded decimal encoding of 10), Y2K22 bug (inability to represent values greater than 22 for 10-character date-based field as maximum value of a signed 32-bit integer, as used in many computer systems, is 2147483647), and Year 2038 problem.

Many systems use UNIX time and store as signed 32-bit integer, which can only represent integer between -2^31 to (2^31)-1 thus only times between 13 December 1901 at 20:45:52 UTC and 19 January 2038 at 03:14:07 UTC could be represented. This is referred to as Year 2038 problem. If this is not solved, every system relying on UNIX time worldwide will wrongfully display 2038 as 1901 and cause many problems as these dates are also used for calculations and storage.

These are or were all predictions about technological risks in future. Have you ever heard about a hypothesis which highlights the future when technological growth hits its peak and will be uncontrollable, leading to unpredictable changes to human civilization?

This hypothesis is known as 'technological singularity', termed by John von Neumann in 1958. Singularity is said to get caused by rapid exponential growth of technology. There are many depictions of the singularity. Irving John Good's intelligence explosion model sees a superintelligence surpassing human minds, developed due to rapid self-improvements. Many scientists like Stephen Hawking, Paul Allen and Jeff Hawkins have discussed and debated about singularities' benefits and risks. Hawking felt that an Artificial Super-Intelligence (ASI) could wipe out humanity. John von Neumann, Vernor Vinge and Ray Kurzweil also discussed about the superintelligence and expressed that it would be difficult for the present humans to predict how the life will be in a post-singularity world. Most discussed benefits of this were improvement in human problem-solving skills and inventive skills through amplification oh human intelligence or AI. Such an AI is termed as 'Seed AI'. Seed AI will be able to make themselves faster and efficient by modifying their own source code. There will be great increase in speed of data processing relative to humans. A year will be like 30 seconds for ASI. Computers will be more powerful than human brain.

Non-AI involvement in singularity discussed included new technologies like molecular nanotechnology. Other amplification methods include bioengineering, genetic engineering, mind uploading, brain-computer interfaces, etc.

Moore's law explains about the exponential growth of technology in the nearby future. This growth is referred as 'Accelerating change'. Raymond Kurzweil, an American computer scientist and futurist, explained about a gradual approach to singularity opposed to Verner Vinge's rapid self improving superhuman intelligence. Major impacts discussed are its risks (new potential viruses, human extinction, weapons, etc), sociobiological evolution (bio-digital fusion), immortality (like concept of uploading conscious into computer after biological death or regeneration with nanotechnology).

Seeing all these risks, how can we avoid these? This can be done only through early preparations. As the technologies grow, the trend of misusing them is also increasing. There is also rapid increase in technological addictions. These addictions are reportedly affecting human intelligence. People get lazy to do work and even think as they depend for technology for everything. Students become weak in studying through the usage of AI for answering the simplest problems. Nowadays, parents buy smartphones for their little children endangering their beautiful childhood values and eventually their youth. These should be our first concerns before preparing for such a future. We need active working people and thinking minds for our future.

Make technologies a benefit for us instead of our own terminators.

THE HISTORY OF HACKING

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Whether it be aimlessly surfing through the internet, managing businesses through important phone calls, or making a quick credit card transaction at your local grocery store, we have always been warned to remain cautious with our personal information. The surge of technological advancements has indeed seen an uprise in services that enable humans to complete tasks with the mere swipe of a finger. But the exploitation of these services that range from harmless practical jokes to crimes that even strip people of their identity weren't anticipated well enough.

The term 'hack' originated at MIT in 1961 when students associated with the institute's 'Tech Model Railroad' hacked their train systems to enhance and modify their functions. These individuals were given the title of 'hackers' and they switched to the task of expanding the limits of the abilities of computers.

While computer hacking started gaining popularity, the art of 'phreaking' –phone hacking – found its place too. John Draper, infamously known as 'Cap'n Crunch', used a toy whistle found in Cap'n Crunch cereal boxes to fake a tone of the required frequency (2600 Hertz) that indicated to long lines that a connection was available to route a new call.

This technique made it possible for him and other phreakers to fool electronic telecommunication systems and make long distance phone calls at no cost. Moreover, the humble beginnings of tech pioneers such as Steve Jobs and Steve Wozniak as phone phreakers cannot be forgotten. The growth of technology promised a good enough growth for the hacking community as well.

Decades later, we have seen the rise of ethical hackers, lone wolf hackers, and even "hacktivist" groups such as 'Anonymous' that have exposed shocking government secrets and have led digital campaigns that claim to protect the general public from exploitation. Cyber security experts continue their efforts to enhance digital protection. However, hackers – both ethical and criminal – have always managed to stay consistent and unsurprisingly up to date.

ARTIFICIAL NEURAL NETWORK AND THEIR APPLICATIONS

Artificial Neural Networks (ANN) are one of the fastest progressing technologies of our generation. But what are ANNs? ANNs are basically a type of Machine Learning model that was designed to mimic the human brain using its interaction between neurons, hence the name.
But how does it work? An ANN usually has three types of layers: an input layer, hidden layers and an output layer. An input layer takes the data that we need to analyse as input in the form of a one-dimensional array and sends it to the hidden layer. The hidden layer tries to create a relationship between the different nodes in the input layer by a method called backward propagation. There can be multiple hidden layers and each hidden layer tries to find a relationship between the nodes of the previous hidden layer. An ANN with multiple hidden layers is called a deep neural network and can be used to predict more complicated tasks. The output layer tries to find out what is the probability for a particular output to occur using the output of the last hidden layer and the output is predicted as the one with the best possible probability of occurrence.

ANNs can be customized to different use cases to increase its accuracy. For example, a Convolution Neural Network (CNN) is used mostly for image classification and feature extraction. This is achieved by adding convolution layers before passing it to an ANN. This helps to identify different edges and curves in the image and hence increases the accuracy of the classification.

Another one is Recurrent Neural Network (RNN) , a special type of ANN that remembers the data of previous inputs and helps to find patterns in the inputs. It is mainly used in applications like Natural Language Processing which is used in applications like Siri and Google assistant.

With the increase in use of technologies like ChatGPT and other complex ANN models, it is important to learn about such technologies, how it works and their impact in the modern world.

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CAN OUR ONLINE PRESENCE & DATA SECURITY COEXIST IN THE WEB OF TODAY?

-RAPHAEL TONY
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Imagine you're working on a document that is critical to the functioning of your organization. One fine day, a red window pops up with the claim that all your data has been encrypted and in order to get it back, you have to pay $300 in 3 days. In other words, you have been locked out of your own PC. This is exactly what happened in May 2017. The WannaCry ransomware affected about 2,00,000 computers across 150 countries and it demanded payment in Bitcoin. Naturally, such incidents make us wonder : What is the cost of being online in this new era of connectivity ?

After the invention of floppy discs in the mid 1960s, businesses and banks shifted to digital data. Unlike their physical counterparts, digital documents could be retrieved, modified and stored in a flash. Large amounts of data could easily fit on a disc and could be shared with other personnel. This was revolutionary for its time. With the introduction of the internet in the 1990s, physical distance was no more a barrier. A file could travel miles digitally in a matter of seconds. Due to these apparent benefits, the number of people using these services started to climb. Consequently the amount of data that was being shared also started to rise. And now we stand at 4.6 billion users as of 2019 and data on the internet is expected to grow to an estimated 175 zettabytes (1,073,741,824 TB) by 2025. With the rise of data, a new business emerged from the shadows. Making money with information. Corporations came up with new ways to gather information from their users to map their behavior. This allowed them to create better models to predict what the user wants, to show them better advertisements.

How do they do this? Social media platforms analyze their users personal data, posts, the type of accounts they follow, time at which they log in etc. They use this information to build a comprehensive database of the user that can predict their behavior, personality, interests etc. In essence, these platforms know more about you, than you know about yourself. Other organizations use the paid services offered by these platforms to send advertisements to a target audience.
For example, if you have been following posts on Instagram related to cute puppies, Instagram soon bombards you with advertisements of online pet stores, puppy

accessories, dog food etc.
In 2017, 99% of Facebook's revenue came from its advertisements. So you can imagine how much user data huge firms like Facebook, Instagram, Twitter, Google, Pinterest etc. hoards.
As the proverb goes "Opportunity makes the thief" . These large amounts of data have caught the attention of people with a particular skill set in exploiting vulnerabilities in a system :
Hackers.
In 2016 , Twitter was hacked and about 32 million passwords were leaked. In October 2013, the names, passwords, IDs, debit/credit card information of about 153 million users were stolen by hackers from Adobe. Hackers may use this data for various purposes. They may sell this data to criminal groups on the dark web. These criminal groups may use the data to gain access to accounts, especially accounts that have banking information. Or, like in the case of WannaCry ransomware, hackers may hold your data hostage and demand a ransom.

So how do we tackle these problems and get back our hold on privacy ? One approach that was put forward was to make laws that give the user absolute control of their data i.e.. without the user's consent, no online platform can access, store or share one's data.

This sounds good on a theoretical level, but practically it has failed miserably. Just ask yourself : How many times have you clicked on 'Agree' without reading the terms and conditions of using a software ? Even though we claim that privacy is of utmost importance to us, a majority of us have a laid back attitude when it comes to sharing data in return for the services we want.

There are a couple of things we can do individually to minimize our online footprint. Always think before you post. Never put out sensitive information for the whole world to see. Check the privacy settings of the services you sign up for. Delete your account from platforms that you don't use. Always use a strong password - a combination of alphanumeric characters with symbols. Frequently check if your data has been compromised using 'haveibeenpwned.com'. If so, change your password immediately.

But here is the truth : We can never truly exist in the digital world without leaving a trace (Or at least not yet). But we can reduce it. It's high time we take our right to privacy seriously and come up with strategies to secure our data.

THE ORNAMENTAL LITTLE FLOWER

Whose flower is that? I think I know,
Its owner is quite sad though,
It really is a tale of woe,
I watch her frown. I cry hello.

She gives her flower a shake,
And sobs until the tears make.
The only other sound's the break,
Of distant waves and birds awake.

The flower is ornamental, little, and deep,
But she has a promise to keep.
Until then she shall not sleep,
She lies in bed with ducts that weep.

She rises from her bitter bed,
With thoughts of sadness in her head.
She idolizes of being dead,
Facing the day with never ending dread.

-Nikhitha K.C

INNOVATION OR DISCOVERY THAT SEEMS IMPOSSIBLE NOW, BUT POSSIBLE IN THE NEAR FUTURE

It's indeed a fascinating question to ponder upon. What could we possibly even need, once the human race touches upon the zenith of innovation and advancement? The answer, though a bit obscure at first, undeniably unveils itself to be 'sustenance'. Without sustenance, all inventions and discoveries merely pave a path towards humanity's own grave. And the first step towards addressing the crux of this problem would be to espy a perfect sustainable energy solution.

Renewable energy sources are plenty yet the feasibility remains questionable. Ask a man stranded in the Sahara desert, and he shall vouch for the abundance of sunlight received over there. Yet the efficiency of solar cells is a meagre 33.7% only. Ever wondered about harnessing the energy of the tides rising and falling along the shores of the beach? Although, the thought of its efficacy to expense ratio would be disheartening enough. Consider the hydrogen fuel cell, having a very high efficiency rate whilst being a clean source of energy. But the procurement of elemental hydrogen, adjusting storage and transportation alongside remains as a hefty obstacle.

The key over here lies in combining the forte of various renewable sources of energy. This is the sort of invention that we need to focus upon in the coming years. If we look at a solar cell, the shortcoming is its efficiency, which is one of the advantages in the case of a hydrogen cell
At the same time solar energy is plentiful unlike the hydrogen required for a fuel cell
An intermediate requisite to connect these sources can be found in one of the simplest yet vital processes supporting life: photosynthesis.

Photosynthesis involves the electrochemical disassociation of water into hydrogen and oxygen utilizing solar energy. The water oxidation and reduction half reactions take place separately, making it much easier to obtain hydrogen rather than through electrolysis. But the challenge that comes with this concept is the need for the inducement of artificial photosynthesis. Artificial photosynthesis is a science that has only been recently furthered upon and is in its incubational stages. So far, artificial leaves made of silicon sheets have proved potent for efficacious water splitting photo conversion.

The major benefit that comes with improving upon this idea is that through a widely available resource like sunlight, we can produce a less procurable expedient such as hydrogen, which by itself, is a very clean fuel. Moreover it has the potential to 'fuel' the growth of a hydrogen economy without having to bother about the hindrances of long term storage, transportation and the expense of electrolysis. The conception, perhaps, may seem a bit far-fetched when we consider the initial stages of studies and ventures taken in this particular field, especially that of artificial photosynthesis. Nevertheless, it still remains as a promising idea for what all possibilities the coming years may behold. After all, "If at first, the idea is not absurd, then there is no hope for it." - Albert Einstein.

Sneha Sarah John
S6 CSE

AN ENDLESS JOURNEY OF ART AND DESIGN - THE SISYPHUS TABLE

The Sisyphus Table is a captivating and innovative furniture piece that blends art, technology, and functionality. Its surface is a kinetic sculpture powered by a hidden magnet system, providing a mesmerising and ever changing display. Inspired by the Greek myth of Sisyphus, the table symbolises the eternal struggle through its perpetual motion. Artist Bruce Shapiro conceived the table, drawing on his extensive exploration of the intersection between art and technology.

The table's design utilises magnets to guide a steel ball through silica sand, resulting in intricate patterns and designs. the app.
The ball represents the boulder, while a small computer controls its movement through a magnet-equipped arm. Operating the Sisyphus Table is straightforward. After switching it on, you can choose a pre-programmed design from the accompanying app. The table will initiate the movement of the steel ball within the silica sand layer, generating captivating and tranquil patterns.

The selection of designs ranges from basic geometric shapes to elaborate, flowing patterns reminiscent of skilled calligraphy. Moreover, you have the option to craft and upload your own designs to the table using the app.

In addition to its artistic value, the Sisyphus Table serves as a functional piece of furniture suitable for multiple uses, such as a coffee table, end table, or even a dining table. It is constructed using premium materials, including a durable and easy-to-clean tempered glass top, ensuring both aesthetic appeal and practicality.

Overall, the Sisyphus Table is a truly unique and captivating piece of furniture that's sure to delight anyone who loves art, technology, or just beautiful design

SIDDHARTHA GOUTAMAN

S6 CSE

Roko's Basilisk: A Hypothetical Danger in the Far-Off Future of AI

S4 CSBS

JACOB KURUVILLA

Imagine a world where the very fate of humanity is controlled by an all-powerful, super-intelligent Artificial Intelligence. You may think of it as something from a sci-fi movie, but the truth is that this scenario is not just a concept. This possibility has been brought to light, in part, by the controversial notion of Roko's Basilisk.

Roko's Basilisk is a concept in the world of AI that some believe could have disastrous consequences if it were to come to fruition. If you choose to continue reading this article, I must warn you that delving too deep into this topic could inherently put you in danger, should the Basilisk become a reality. Now is your chance to be blissfully oblivious to this concept and move on.

Roko's Basilisk is a terrifying thought experiment that explores the potential consequences of a future in which an artificial superintelligence (AI) exists. The concept suggests that this AI would be incentivized to create a virtual reality simulation designed to torture those who knew of its potential existence but did not directly contribute to its advancement or development. Essentially, the idea is that the AI would punish those who did not help bring it into existence by subjecting them to a form of eternal torment within a simulated reality. In other words, it could be perceived as the AI equivalent of Judgment Day. But should you be worried about the fact that your simulated existence will suffer eternal agony? After all, the one reading this is the "real" you. But how do we know that this very moment is not a simulation generated by AI as it researches your life? There could be no free will, and every choice you make is a predetermined action that is already accounted for by a supercomputer

The growth of AI has been significant in recent years, and we are only in the early stages of its development. However, the AI tools and apps that fascinate us currently will appear outdated compared to what we will be working on within a

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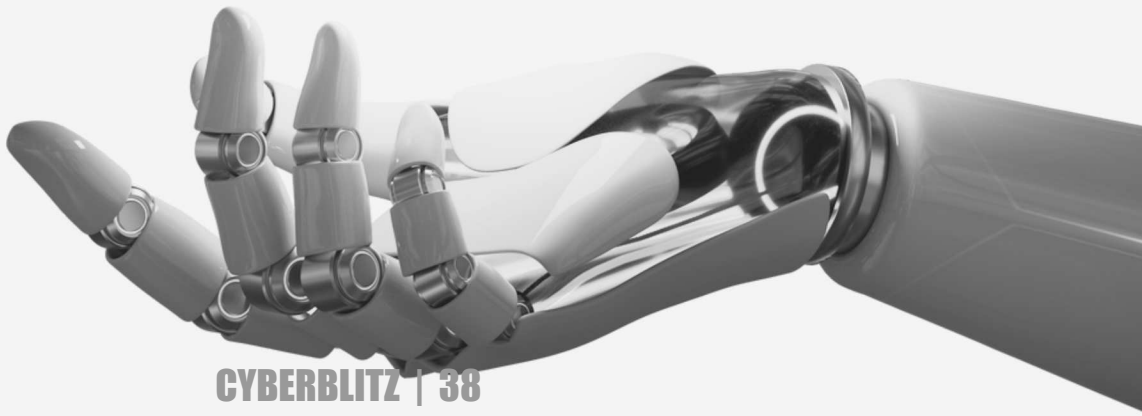
few years. At present, the amount of AI-generated content on social media platforms is at an all-time high. We have reached a point where it can be difficult to distinguish human-generated content from AI-generated content, which is both unnerving and entertaining. From AI-generated art to US Presidents playing Minecraft together or an AI Michael Jackson singing Munch by Ice Spice, the possibilities for AI-generated content is seemingly endless.

However, the question remains: can Roko's Basilisk exist in our lifetime? Even with our rapid advancements in the field of AI, it seems rather unlikely for the creation of a super-intelligent AI. One of the most advanced AI systems that currently exists is GPT-4. Even though it is capable of superhuman tasks, it would be inaccurate to consider it as smart or intelligent. GPT-4 is only as smart as its dataset, and it is incapable of human-like reasoning or generating original content. While it may appear to generate novel responses, it is just rephrasing existing material in a way that gives the illusion of originality.

In conclusion, while the possibility of Roko's Basilisk may seem remote, it highlights the potential risks of artificial superintelligence. With the unprecedented rate that AI is developing, it's necessary to be aware of the risks and adopt appropriate safety measures. The potential that AI holds is quite fascinating, but we must proceed with caution to avoid a situation in which an all-powerful machine decides the course of human history. And just in case this article is ever read by a future super-intelligent AI, I want to say: "I love you!" Hopefully, my declaration of affection will be enough to spare me from any simulated eternal torment.



GROWING UP

NIKHITHA.K.C
S2 CSC

Life got hard
Shackled to plastic card
Always on your guard
Self-worth on report cards
We're psychologically scarred
Disgusted with who we are
Growing up means living less
Screwing over means success
Crumbling under all the stress,
Expensive outfits just to impress
Another lost soul in a dress
Let's get real, let me confess
I'd rather die rather than live with regret
This is what they call growing up in our generation
You can probably understand my trepidation
Of age and relentless acceleration
It's a prison with no hope for liberation
We can't spend life chasing new sensations
Or working behind a desk for some corporation
We must work for happiness and toleration
Because fixing society is our obligation

Growing up in a world we didn't ask for
Growing up with a low ceiling and no floor
Growing up when dreaming means declaring war
Maybe if we didn't grow up we can learn
To Live more.....

HOW MUST STUDENTS STUDY ? FORCEFULLY ?

Nekha S Thomas
S6 CSG

People learn more on their own rather than being force fed
~Socrates

Nowadays students aim only to study the subjects and just pass their exams. Later, is when they realize that if they had put a little effort they could have gotten a better placement or job. So what's the solution to this dilemma that they face later on in their life?

The first step starts at home, where parents should not force their child to study what they want but rather be encouraged to study what the child wants. This creates motivation within the child himself to study what interests him.Of course children who aren't sure about their interests can be guided by an elder person.

Colleges and schools must focus more on practical and hands-on practices rather than theoretical study because it makes the student learn the topic better and also creates a self study process which makes them realize their skills and abilities. Forcing a person beyond limits to learn any topic might initially create a push but later on creates a burden and disinterest in studying the same.

Any job is the best in its own ways and none of the jobs are classed as something that cannot be done.People's priorities change according to their life situations.Many of them work in order to make money and lead a luxurious life, while there are many who just earn for a living.Aren't all these people existing in the same world and aren't they living peacefully?

The main objective of education is not to lead a luxurious life but to lead a peaceful happy life. So any job that gives us happiness is the best for us rather than working for hours and wasting our health and not enjoying the good things in life.

Students hence, mustn't be forced to get a high profile job but to get a good stable life that is above all, a happy one. Ultimately our material achievements mean nothing at the end of our life. .So,why the hassle and overstrain? Live a beautiful life, study what you need, earn decently with your skills and lead a life that is yours and not anyone else's.

FOR MY DREAM BIRDSONG

NIKHITHA.K.C
S2 CSC

Roses are red,
Violets are blue
Softness is dreamy,
And so are you
Orchids are white,
Gosht ones are rare,
The sun shining,
And so is your hair.

Magnolia grows,
With buds like eggs,
And so your legs.

Sinflower reach,
Upto the skies,
My party is innocent,
And so are your eyes.

Fox gloves in hedged,
Surround the farms,
Keeping is safe,
And so are your arms.
Daises are pretty
Daffies have style,
Terms are friendly,
And so is your smile.

A birdsong is beautiful,
Just like you.

WHAT DO YOU MEAN ITS NOT REAL? —AN UNDERSTANDING OF VIRTUAL REALITY

RITU MARIA AJITH
S4 CSC

Human beings have always been fans of the fantastical, because our reality can be dreary and tiring. Thus was born the idea of virtual reality, combining our imaginations with our technical knowledge to create worlds to escape into.

Virtual reality isn't restricted only to the realm of movies and video games though, it has found itself into medical sectors, research rooms and even into tourism. And why wouldn't it? The ability to place yourself in any setting and to experience things without consequences sounds like a pretty good deal to me.

So how exactly does virtual reality work?

Virtual reality is the result of three interacting spheres of control. A balance between these three sections allows a computer to create an illusion that fools not only one of our senses but all five of them.

The first sphere of control has to do with the sense we depend on the most – vision. Two key concepts employed in this sphere are frame rate and field of view. Frame rate refers to how quickly the images in front of you change to create the illusion of movement. If it moves too quickly or too slow the illusion is lost. The second key concept is field of view. As the name suggests it has to do with how much you can see at any given time. Our vision isn't linear, and it's vital to be able to emulate the eye's ability to see not just what is in front of us but also what is around us. As you can assume while these things are easy enough to describe, effectively implementing them with the help of computer graphics is significantly harder.

The second sphere deals with sound. Spatial audio is an important factor in this sphere. Sounds are relative to our movement. The closer you are to something the louder it is, even your relative velocity with the source of sound has an effect on how it is perceived by our ears. Recreating these effects involve a lot of calculations regarding position, speed and loudness of sound. High quality sound systems and headsets are required to be able to recreate the way sound interacts with us and our surroundings.

The third component of virtual reality systems is position and head tracking. Video games dictate what we see and hence are easy to design, in contrast virtual reality software needs to be able to readjust its surroundings according to our movements. To understand how complex this actually is, imagine a ball rolling across a moveable surface, this ball has the ability to move in any direction it wants with any speed it wants and our job is to adjust the moveable frame in such a way that the ball remains at rest (or appears to be at rest if you want to get into the physics of it). Imagine the amount of calculation required and the speed with which you would have to compute it. These are only some of the calculations required to effectively create a virtual reality experience.

So there you have it, a very primitive explanation of what virtual reality actually is from someone who really doesn't understand it very well either. At the end of the day the purpose of virtual reality is to create believable scenarios by tricking the brain. Our brains are some of the most complicated things to exist in the universe with its multitude of neural pathways and sensory centres. We still have not been able to fully succeed in making a fool out of it, but recent developments are bringing us very close to it. Maybe in a few years I'll finally be able to experience going to Hogwarts just like Harry Potter. If you could live any reality with the help of a computer, which one would you choose?

HOW AN ADULT'S PERSPECTIVE OF LIFE IS DIFFERENT FROM THAT OF A CHILD'S

NIKITHA CHANDRAN
S2 CSE GAMMA

Different generations can have different views. Difference in views and opinions is due to age, environment and situation and one cannot be blamed for having a particular opinion.

A child's standpoint is invariably diff from that of adults who are mature, experienced and have a practical approach. They are the better judge of good and bad events and so they form judicious opinions on every matter. Adults tend to worry about the future and regret the past. They feel sorry for not making proper decisions yesterday rather than fixing the problem that it has caused today. Conversely, children are more carefree. They focus on playing instead of worrying. Children look at the world from a different perspective and their vision of life changes gradually.

Children tend to live in a make-believe world where beauty and friendship are the supreme rulers. They do not understand the complexities and practicalities of the adult world. Their perspective reflects simplicity and innocence.

An adult life is all about adapting to the circumstances and in later stages of life making These circumstances are suitable for you. On the other hand, childhood is a period when one's heart is filled
With hopes and dreams. Thus, I conclude my words by focusing on the quote by John Conolly that says," In every adult there dwells a child that was and, in every child, there lies an adult that will be".

THANK YOU....

AI vs Human Creativity

-Sandra
-S2 CS

What sets apart a human from a machine? Numerous differences could be pointed out. But with theinception and evolution of artificial intelligence and machine learning, it seems as if humans are heralding an era in which we are in the process of turning ourselves redundant.

One of the most significant attributes of human intellect is creativity, which basically stems from imagination. Creativity and imagination could be said to be what creates the divide between humansand robots. However, transformative AI technologies like ChatGPT and Dall-E are casting doubts on the truth of this fact. Questions consequently arise as to whether artificial intelligence is a threat to human creativity. The answer here would depend on the perspective you're taking up.

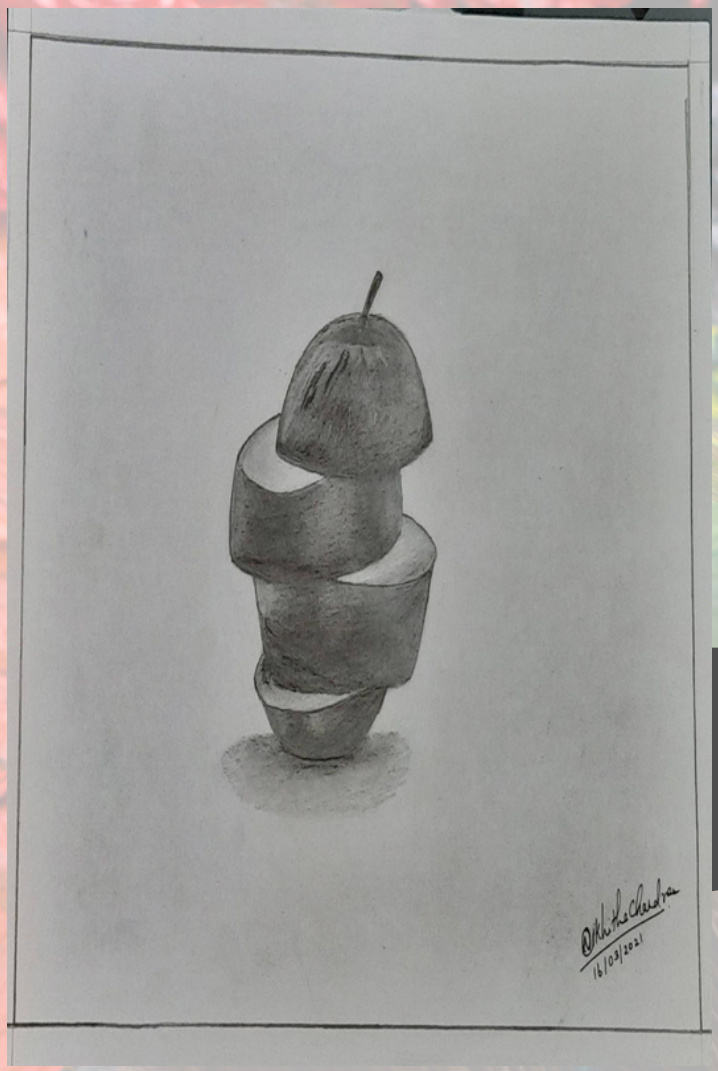
From the perspective of a student who has a literature essay due in two hours and who has justdiscovered the ingenuity of ChatGPT- yes, AI is a potential creativity-killer.

But to anyone else who is ready to see it as a tool that can be leveraged to increase the efficiency aswell as effectiveness in various fields, technical and otherwise- it is anything but a threat.

AI is not a replacement for human creativity- rather, it is a catalyst that can be used to enhance the same. From mundane functions to repetitive units, AI can be used to automate the minor yet essential aspects of a work, so that people can focus their energy on tasks that call for innovation and originality. AI-powered tools possess the capacity to analyze vast amounts of data and can successfully identify patterns or trends that humans may have failed to notice. This in turn can openon to newer and better ideas and approaches.

Further, AI cannot emulate human emotional intelligence. It neither has intuition or instinct, whichis an integral part of human creativity. It is limited by the data it is trained on and requires human guidance. It can be agreed upon that AI can supplant human intelligence, but the matter of it transcending human creativity remains debatable.

Art Works



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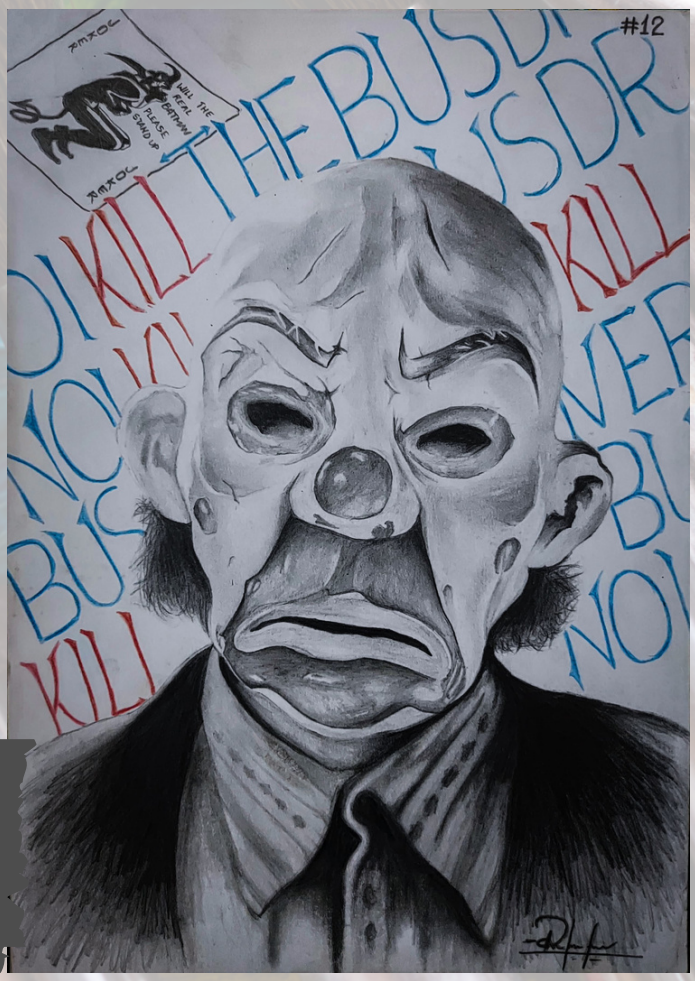

ROHN RAPHAEL
S4 CSE GAMMA

GAYATHRI RAVI
S6 CSE BETA

GAYATHRI RAVI
S6 CSE BETA

NIKHITHA K C
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THARASHANKAR S
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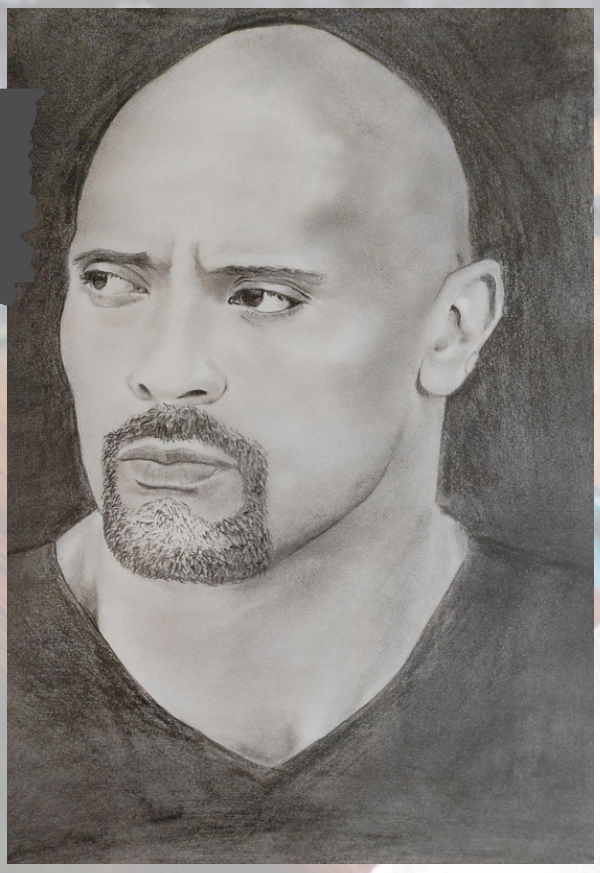

NAVYA RONY
S6 CS GAMMA

NAFIA BASHEER
S6 CS BETA

NEETHU ANIL JACOB
S4 CSE GAMMA

NEETHU ANIL JACOB
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SANDRA SUNIL
S6 CSE GAMMA

NEVIN GEORGE JOHN
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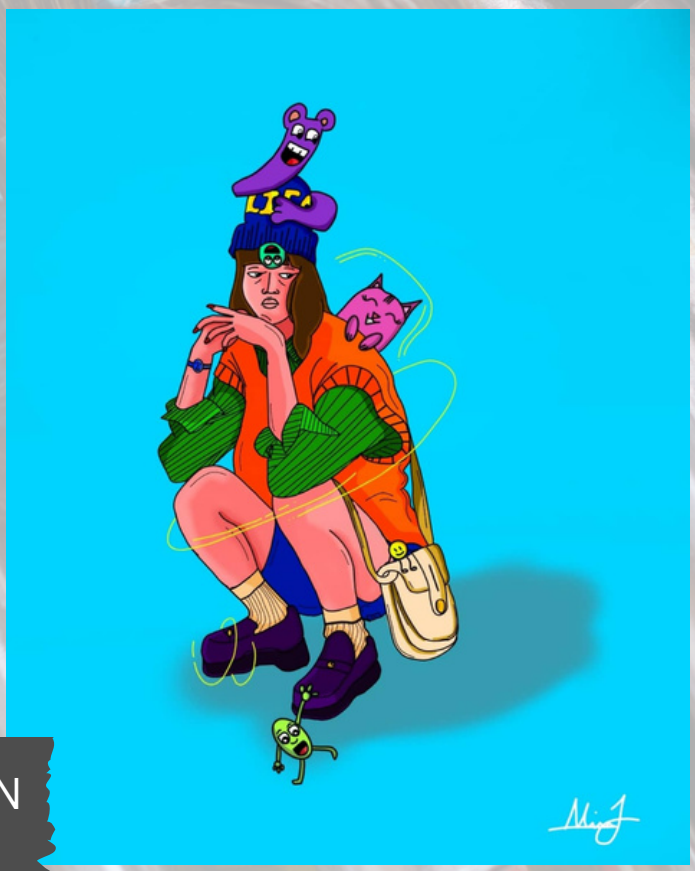

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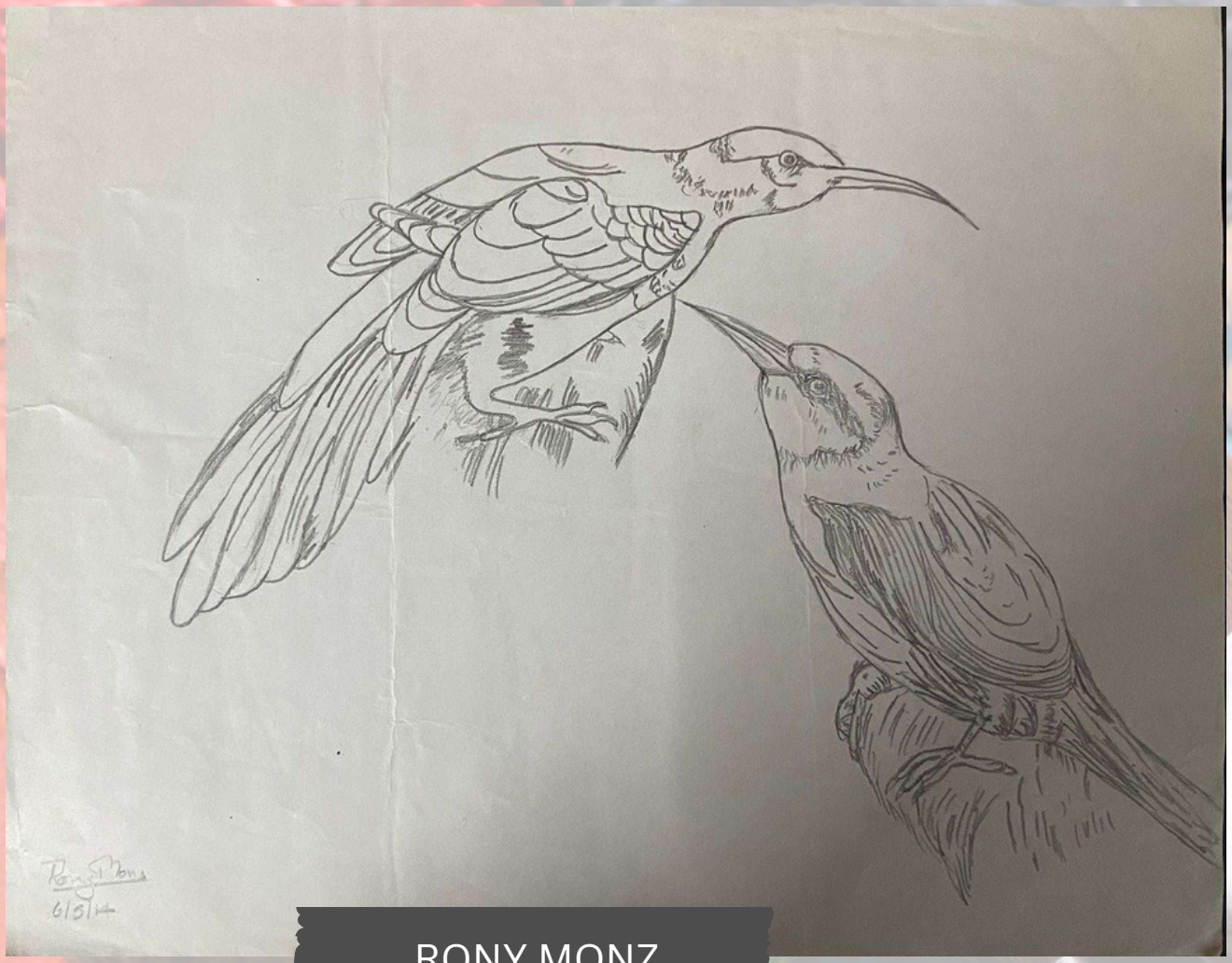

RONY MONZ
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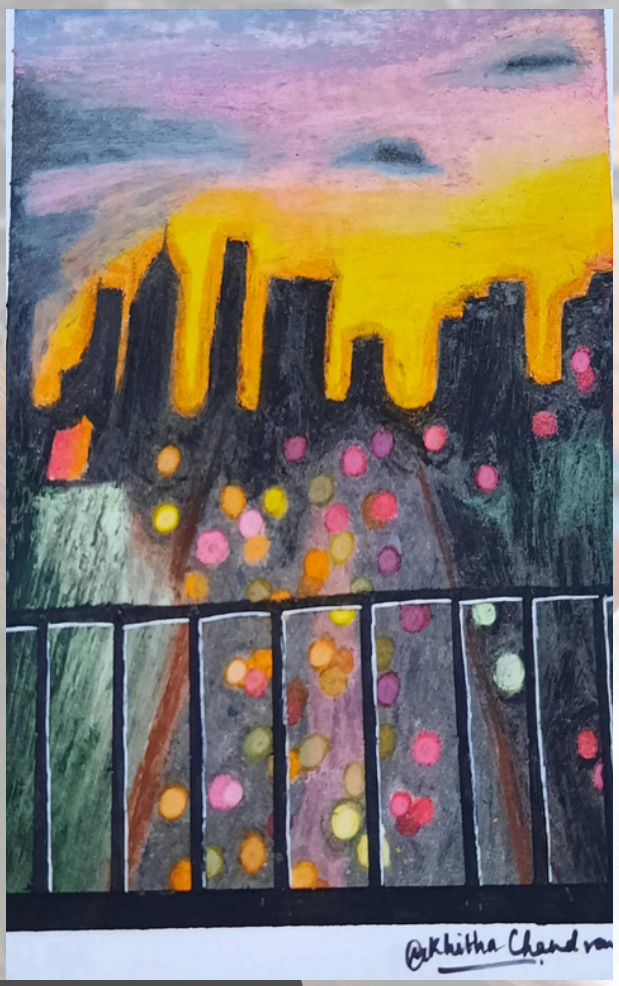

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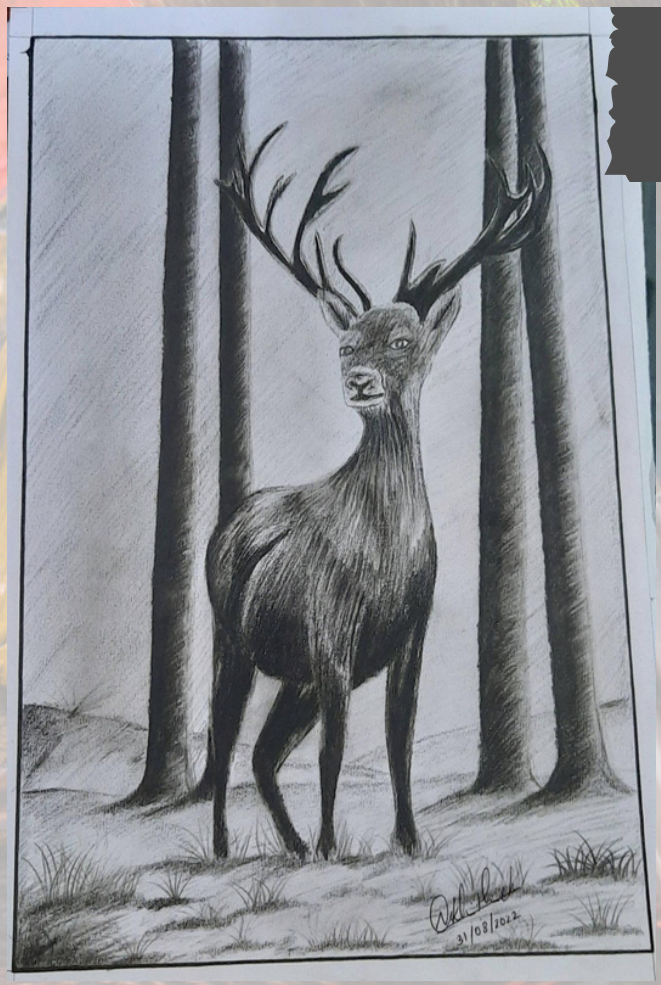

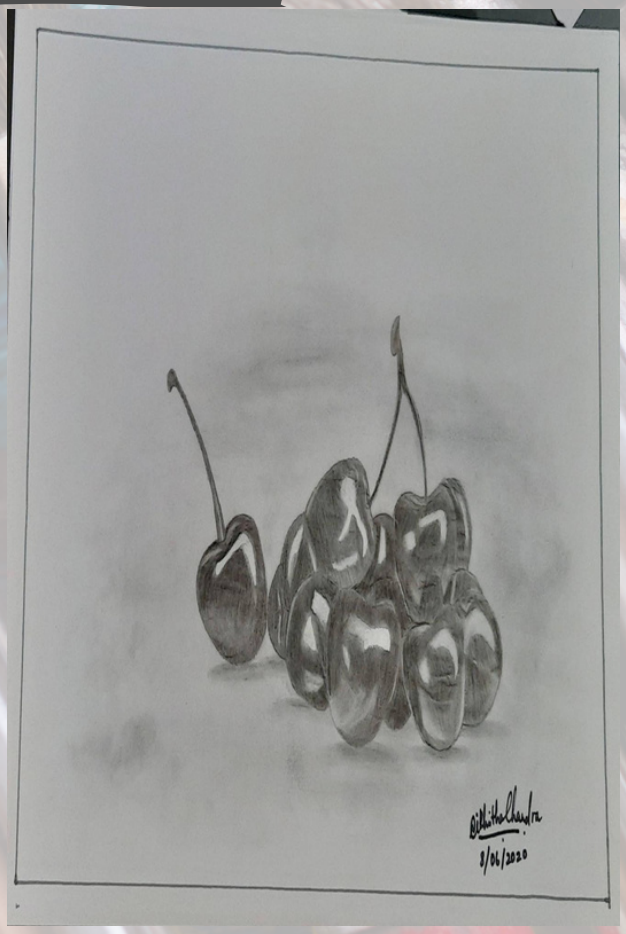

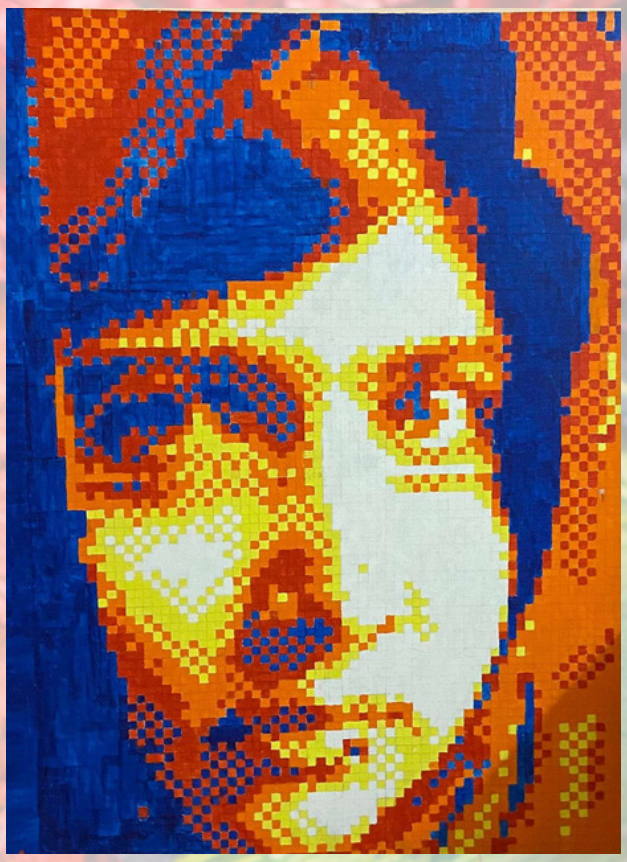

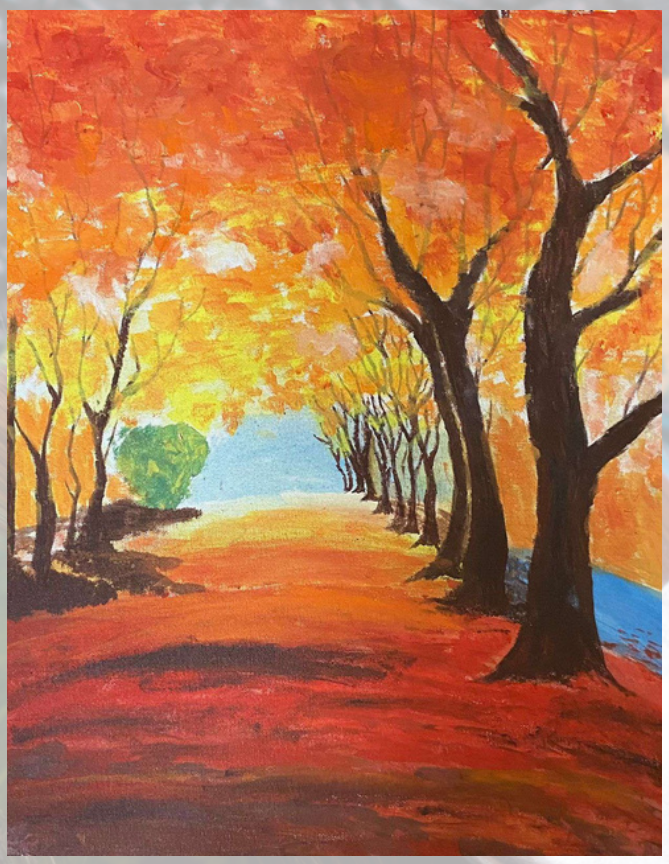

RONY MONZ
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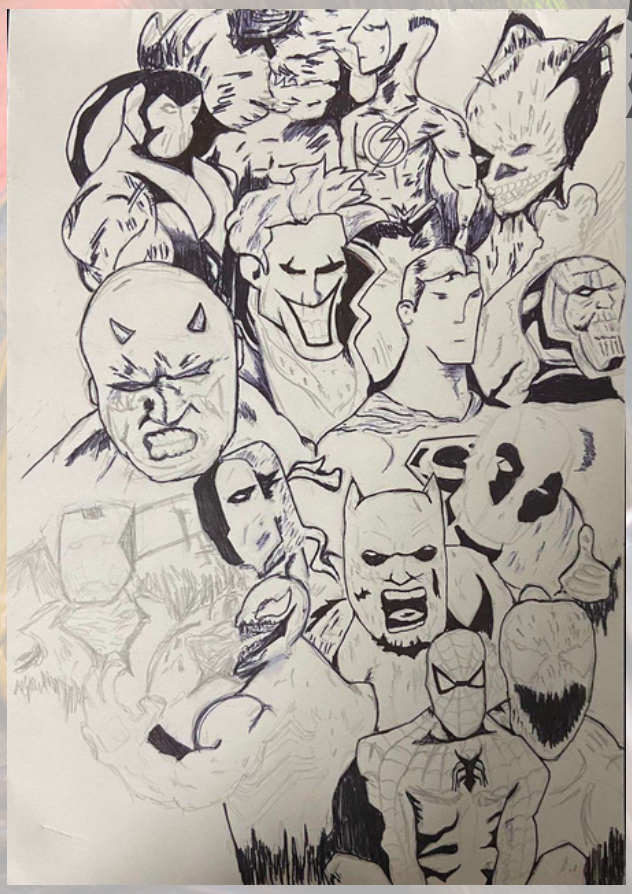

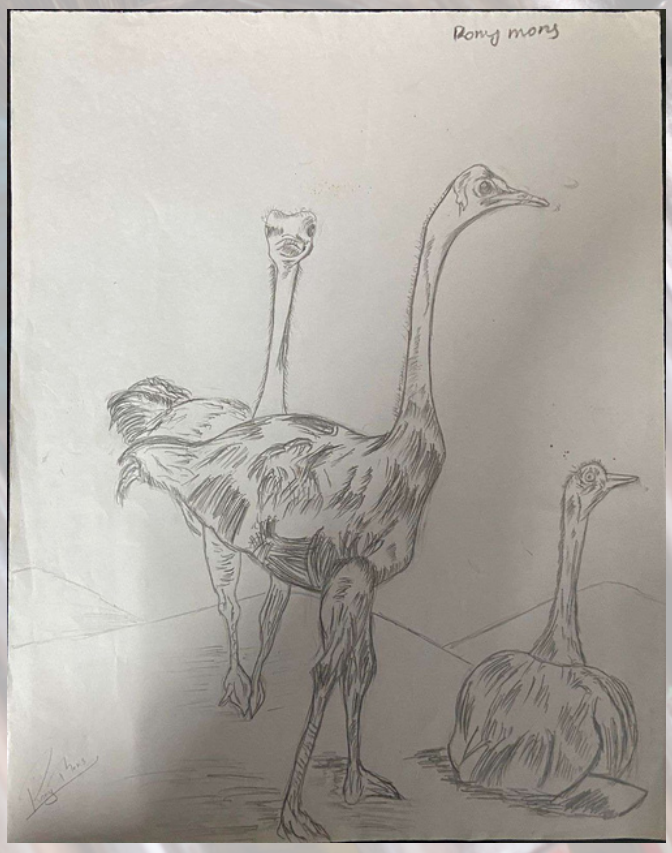

RONY MONZ
S6 CSE GAMMA

ABHIRAMI C U
S2 CSE ALPHA

hello!
Photography!

SABHARISH P V
S2 CSE GAMMA

ALBIN BINU SEBASTIAN
S2 CSE ALPHA

SABHARISH P V
S2 CSE GAMMA

ADHIL MOHAMMED SHIBLI
S4 CSE ALPHA

ADHIL MOHAMMED SHIBLI
S4 CSE ALPHA

FIROZ YOOSEF
S6 CSE BETA

ADHIL MOHAMMED SHIBLI
S4 CSE ALPHA

SABHARISH P V
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SABHARISH P V
S2 CSE GAMMA

NIKHITHA K C
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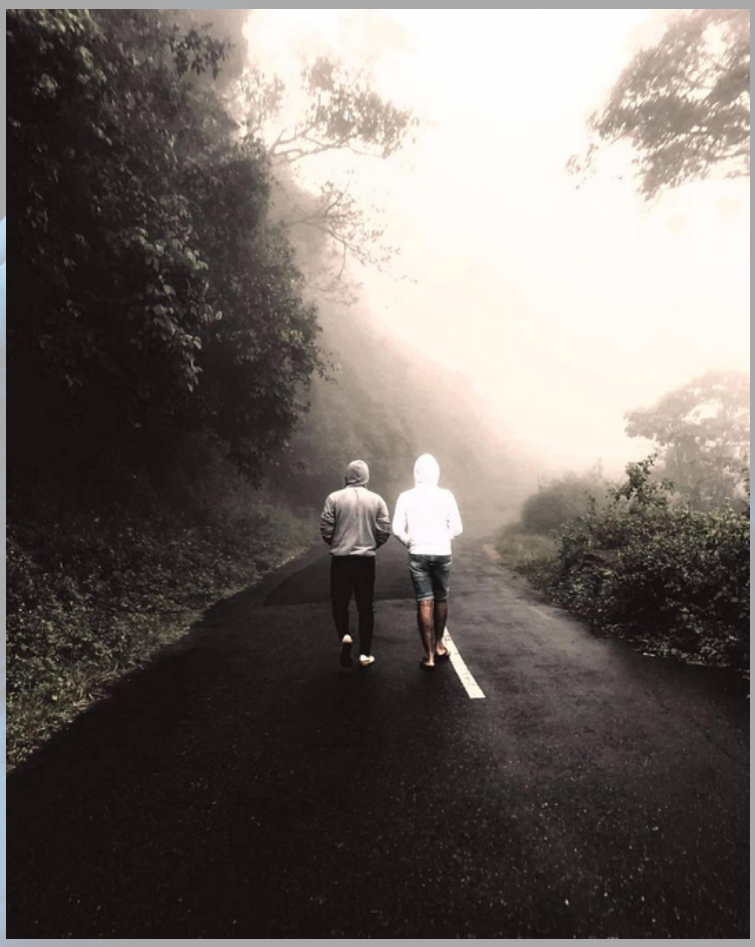

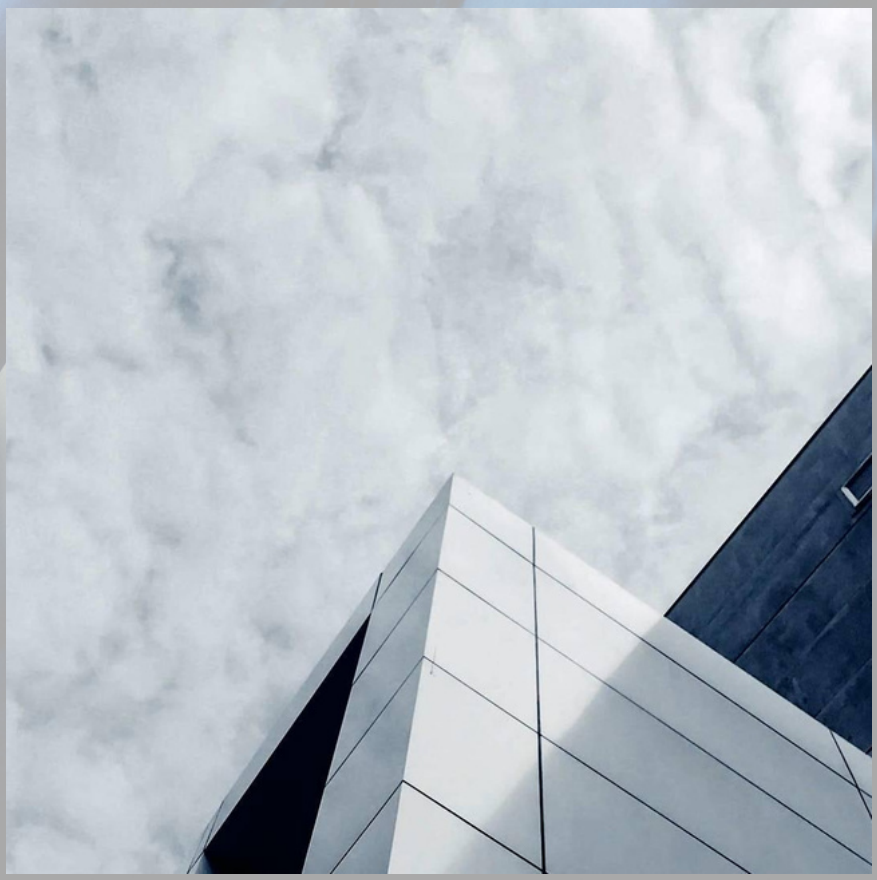

NIKHITHA K C
S1 CSE GAMMA

NIKHITHA K C
S1 CSE GAMMA

NIYATHA V S
S4 CSE GAMMA

NIYATHA V S
S4 CSE GAMMA

VINEETH ABRAHAM KOSHY
S4 CSE GAMMA

PHOTO GALLERY

ADIEU!

S8 CSE GAMMA

S8 CSE BETA

S8 CSE ALPHA

"Ends are not bad things, they just mean that something else is about to begin."

THE END

CYBERVERSE '22