



CYBER TRINITY

PRESENTS

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SSIPMT
MUJGAHAN RAIPUR



DEPARTMENT OF COMPUTER SCIENCE ENGINEERING

NEWSLETTER

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VISION

To create professionally skilled and ethically sound computer engineers to meet the evolving needs of industry and society."

MISSION

- To impart quality, innovation-driven education through an effective, outcome-based teaching-learning process.
- To nurture ethical values, creativity and novelty among students to become entrepreneurs and establish start-ups.
- Enhance strong relationship with intellectuals and industries to help learners to remain in touch with latest technologies.
- To encourage students to focus on sustainable solutions to improve the quality of life and the welfare of the society.

MEMORANDUM



"Innovation pulses the progress. Let's develop an environment where the ecosystem of creativity thrives."

The pace of technological advancement is rapid, propelling people towards development and growth. However, amidst this progress, one crucial aspect must not be overlooked – nature. Nature, the source of life, resources, and energy, surpasses all other developments. Growth is vital, but never at nature's expense. Prioritizing sustainability ensures growth aligns with environmental well-being. Our institute has the potential to lead our engineers towards a brighter future by fostering a sustainable environment

**SHRI NISHANT TRIPATHI
CHAIRMAN, SSIPMT
RAIPUR**

"Success is not the key to happiness. Happiness is the key to success."

SSIPMT Raipur always focuses on providing quality education to our students. Our college highlights opportunities for students to engage in extracurricular activities, internships, and leadership roles that contribute to their holistic growth as individuals. We are committed to fostering a culture of excellence and innovation. SSIPMT Raipur provides a supportive learning back-ground to nurture their personality. We also focus on preparing for the future while enjoying the present. together, we will overcome any obstacles and emerge stronger than ever.



**DR. ALOK KUMAR JAIN
PRINCIPAL, SSIPMT
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MEMORANDUM



DR. RAKESH KUMAR KHARE
ASSOCIATE PROFESSOR
CSE DEPARTMENT

It gives me immense pleasure to connect with you all through this edition of our departmental newsletter. As students of Computer Science and Engineering, you stand at the forefront of a rapidly evolving technological era – one filled with limitless opportunities, challenges, and responsibilities.

In these transformative times, it is essential not only to build strong technical foundations but also to cultivate a mindset of innovation, critical thinking, and ethical responsibility. The world looks to computer scientists and engineers not just for solutions, but for sustainable, inclusive, and forward-thinking ones.

I urge each one of you to make the most of the learning resources, research opportunities, and mentorship available to you. Participate actively in hackathons, seminars, workshops, and community-driven tech events. These experiences go a long way in shaping your professional and personal growth.

Remember, true engineering is not just about writing code – it's about writing the future.

Stay curious. Stay committed. And above all, stay grounded in values.

Wishing you continued success in all your endeavors.

As we reflect on the growing influence of Artificial Intelligence (AI), it becomes clear that this technology is reshaping diverse aspects of society in profound ways. In the realm of criminal investigations, AI has introduced new possibilities by reprocessing forensic evidence, identifying suspects, and drawing vital connections through DNA-matching, facial recognition, and natural language processing. These innovations signal a transformation in investigative practices, while at the same time reminding us of the pressing concerns surrounding bias, privacy, and accountability that must be addressed with caution.

Equally significant is AI's role in shaping the dynamics of social media platforms. Engagement-driven algorithms observe behavioural patterns and employ features such as infinite scroll and notifications to strengthen user interaction. While these advances enhance connectivity and accessibility, they also risk confining individuals within "filter bubbles," thereby limiting diverse perspectives and, at times, fostering polarization.

In such a rapidly evolving landscape, it is essential to view AI not merely as a technological advancement but as a force that requires thoughtful reflection and responsible adoption. By cultivating awareness and engaging with AI critically, we can ensure that it continues to empower individuals and institutions rather than restrict them.



MRS. KESHIKA JANGDE
ASSISTANT PROFESSOR
CSE DEPARTMENT

INTRODUCTION

"Scrolling through life shouldn't replace living it."

Social Media- a digital tool designed to allow its users to have textual conversations, or share media files, usually, a third-party application being the overall moderator. Initially, initially, it was designed to help people connect with others on a common platform, building their personal like-minded community. On the break of COVID-19, where physical exposure was threat to one's own life. It let people socialize through a Virtual Medium. Platforms like Facebook, Instagram, and WhatsApp allowed them to stay in touch with family. Video calls, chats, and group discussions helped reduce feelings of loneliness. Humor and creative content helped people cope with stress.

On Its wake, Social Media Vigilance was the new obsession. Its validation, giving immense joy, triggered by a Dopamine hit. As a result Attraction became Addiction, and gave people, "Trenxiety" – The anxiety of keeping up with the trend. A Netizen's uncontrollable desire to browse through Social Media pages and their futile competition of knowing everything, is making them fragile. Instant Reactions, Overwhelm Ness and low emotional Quotient are bugs to Human Brain. Brain rot being Oxford's Word of the Year 2024, is evidence, of its effect on people affected by it.

A sincere unnoticed concern being, Emotional Numbness. When a person stops feeling emotional numbness at its best. The inability to cry when sad or laugh when Happy; getting angry for no reason. Brain gets so habitual of "reel" driven emotion that it becomes devoid to any real Emotion.



ADDICTIVE BEHAVIOUR OF ALGORITHMS – HOW DOES SOCIAL MEDIA ACTUALLY WORK?

The Role of Algorithms in Personalization

Social media uses algorithms to personalize your feed. These algorithms analyze your activity like likes, comments, and time spent on posts. Based on this data, they show you content they think you'll like or engage with. This personalization keeps you scrolling as it shows content matching your interests. Algorithms aim to maximize engagement, sometimes leading to endless scrolling. This can make social media addictive as you see more of what interests you, triggering continuous interaction. Understanding this helps you manage your social media use better.

The Business Model of Attention Economy

Ever find yourself wondering why you can't scroll away from Instagram Reels or Youtube Shorts? That's the attention economy at play! Its model is all about captivating your attention and holding it. Businesses get sophisticated algorithms to feed you continuous streams of material, perfectly keyed to your interests, so that you keep watching. And this constant watching gives them all sorts of useful data on you, which they then sell to advertisers. Basically, if the product is "free" to the consumer, then the consumer is the product. Your attention is worth something and sold to the highest bidder.

The Dark Side: Mental Health and Behavioural Impacts

Social media like Instagram, Youtube, Twitter etc. rely heavily on Algorithms due to which the youth faces following problems-

1) Creation of echo chambers and filter bubbles -

People tend to watch and engage in only that content which caters them, due to which they become isolated in mindset. It fosters polarization and hostility.

2) Addictive usage patterns -

It exploits the brain's rewarding mechanism by "like" and "Share" options. It's excessive usage can contribute to low self esteem, depression and anxiety.

3) Behaviour Changes -

Increased Usage can lead to short attention spans, insomnia, less productivity, and deteriorating interpersonal relationships. It also reduces offline interaction due to which people feel a "sense of void".



Can We Outsmart the Algorithm?

Yes, we can outsmart the algorithm- but it starts with self- awareness. Social media algorithms thrive on our habits, learning from every click, like, and scroll. We need to change how we interact online. To outsmart them, we must disrupt this cycle. To counter it, Curate your feed with diverse and meaningful content. Skip reacting to viral outrage and resist the urge to scroll endlessly. The algorithm isn't controlling you- it's responding to you. Be unpredictable. With consistent, intentional action, you can reshape your feed, reduce manipulation, and reclaim your attention. Outsmarting it isn't fighting tech - it's about mastering it.

TECH GEEK

MURDER, MEMORY, AND MACHINE: HOW AI SOLVED THE UNSOLVABLE

Imagine, one fine morning you wake up, groggy-eyed and sipping your tea, when your TV flashes breaking news: "AI helps cybersecurity crack a 19-year-old cold case." You blink twice, trying to grasp the gravity of the headline. pause mid-sip, squinting at the screen, trying to make sense of what you just seen. What seems like the script of a gripping sci-fi thriller is suddenly your reality. Not in New York, not in Tokyo – but right here in Kerala, India.

A brutal triple homicide incident that happened in Kerala in 2006 revealed the mysterious murders of a mother together with her twin daughters found dead inside their house. The investigation ran cold. The suspects vanished. The investigation went cold since 2006 through 2025 without producing any information to either arrest any perpetrators or discover hope. Artificial intelligence entered the process to solve a murder case that retired from investigation since 2025.

The Kerala Police applied age progression and facial recognition tools from AI to produce new pictures of suspects who had disappeared like a thin air. Social media images alongside public surveillance data matched with faces that AI technology had created. The enigma lasted nineteen years until



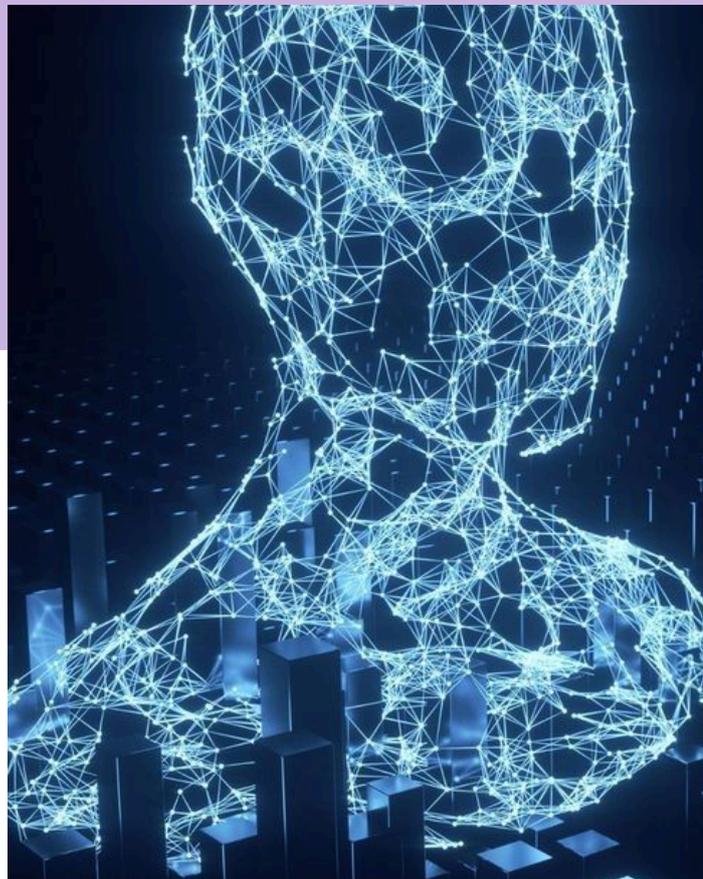
AI technology brought closure to the missing suspects in just a few days. AI delivered justice which had been postponed yet it never withheld it from those who sought justice.

This case was more than just a headline, it was a question, A glimpse into the future of justice. Was it a reminder that the past can be resurrected – not by miracles, but by machine. Will AI is the future of justice, will cybersecurity incorporate Artificial Intelligence to give Justice?

As our lives shift more and more into the digital space, so do the threats we face. The internet, once a symbol of endless opportunity, has also become a playground for modern-day criminals. Phishing scams trick unsuspecting users into giving away personal information. Ransomware attacks can lock down entire hospitals, schools, or corporations until a hefty price is paid. Cyber Criminals now are not just the hackers in our basement but a part of this sophisticated networks that adapt quickly, attack silently gathering every minute detail, and often vanish without a trace. If cybercriminals are advancing so is our cybersecurity, all thanks to Artificial Intelligence.

AI in cybersecurity allows real-time threat detection, intelligent firewall management, anomaly detection, and pattern recognition at a scale human analysts could never match. Here's how AI teams up with cybersecurity:

- 1. Behavioural Biometrics:** Recognizes user behaviour patterns (like typing speed or cursor movement) to detect impostors.
- 2. Threat Intelligence Platforms:** AI scours the internet to identify new vulnerabilities and potential exploits.
- 3. Incident Response Automation:** AI can isolate infected systems and take corrective action before a human even blinks.
- 4. Phishing Detection:** AI filters emails and websites, flagging those mimicking trusted entities.



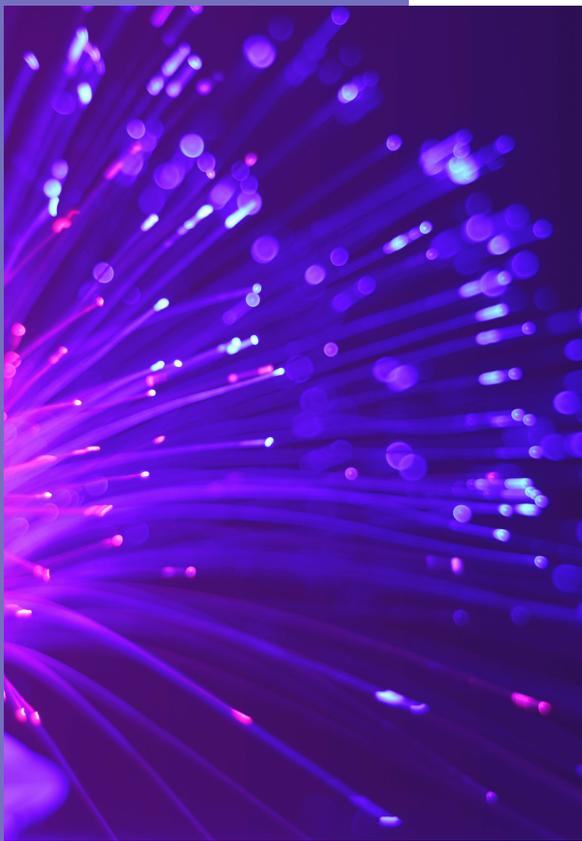
In essence, AI becomes a digital watchdog – tirelessly vigilant and self-improving. So when a case like Kerala's resurfaces, with AI analysing social media patterns or identifying faces in the sea of digital profiles, it's the perfect blend of law enforcement and cyber-intelligence working as one to solve such complicated cases and bring justice.

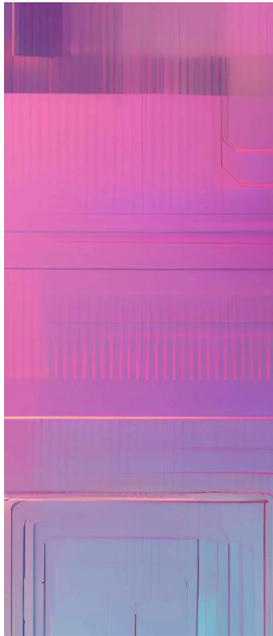
Now, let's take a pause. The question that lingers isn't about how AI works — but should we rely on it?

Justice is more than catching criminals. It's about fairness, empathy, intent, and ethics. While AI solved the Kerala case, what if it had misidentified someone? What if an innocent man was put on trial because an algorithm decided so? Can an AI understand that? Or are we outsourcing morality to a machine that understands code, not conscience? Here are the major concerns as Artificial Intelligence is a algorithm which can be manipulated and data can be changed :

1. **Bias in Algorithms:** If the data used to train AI is biased — racially, culturally, or socially — then AI's decisions could reflect or amplify those biases.
2. **Black Box Problem:** AI often works in ways even developers don't fully understand. If an AI accuses someone, can it explain why?
3. **Accountability:** Who is responsible if AI makes a wrong decision? The coder? The police? The government?
4. **Privacy Concerns:** In the pursuit of justice, how much individual privacy are we sacrificing

The answer lies not in replacing humans, but in augmenting them. AI should serve as a tool — powerful, fast, and intelligent — but the final decisions must rest with human beings. Judges, investigators, and policymakers must remain at the helm, interpreting data through the lens of ethics and empathy. The future of justice may look like this:





truly deliver justice with heart and ethics? Or are we chasing a digital dream that may never be real? Maybe one day AI will lead the department or it will just be one of the failed attempt till refining the intelligence. But one thing's certain – AI won't replace justice, but it's already reshaping it. And somewhere, in another dusty police file, a cold case waits. Maybe the breakthrough won't come from a courtroom – but from a server room.

- 1.AI scans thousands of cold cases for leads.
- 2.Cybersecurity AI tracks online movements of suspects.
- 3.Facial recognition flags potential identities.
- 4.Human investigators review, question, and validate.
- 5.A digital-ethical committee oversees decisions to prevent biases.

This is not the fantasy of tomorrow – it's the reality of the next decade. So, where does that leave us? What happened in Kerala wasn't just the end of a case – it was the beginning of a new possibility. AI didn't just solve a crime; it rewrote the rules of justice. But it also raised a question: Can machines, guided by code,





Folding the protein, Unfolding the future

For a minute lets go back to 2020; the same horrific year when COVID-19 made havoc in the world. Not just everything was shut, work from home was the new norm; the sky was filled with siren of ambulances, police, cries of people who lost their loved ones.

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It wasn't less than a nightmare for many. The world took almost 3 years to cope up with the pandemic until everything start becoming normal. At present, as you turned on your TV, you got a news that a new virus which has no previous match with any older viruses, is spreading across humans and it can soon become a new pandemic. Won't it look like a playback of 2020. You may even start preparing in

advance before vaccine was anything bad immediately occurs. But it turns available to all. out that the All thanks to the vaccine of the virus integration of is already available Artificial Intelligence in which is more than 90% effective and almost every field, everyone will get the development and rate of their dose soon. For and progress has been a minute it may accelerated very sound like a TRP stunt by media, but much, so does in that's not the the field of Biology actual case. and Chemistry. Curious about the If you have ever incident, you went studied chemistry to research the and biology then you must know whole scenario and you found out that that proteins are the protein the building blocks structure of the of life. Your DNA, new virus was RNA are made from already predicted these proteins and with the help of AI the proteins are because of which, made from a chain the formula for of amino acids.

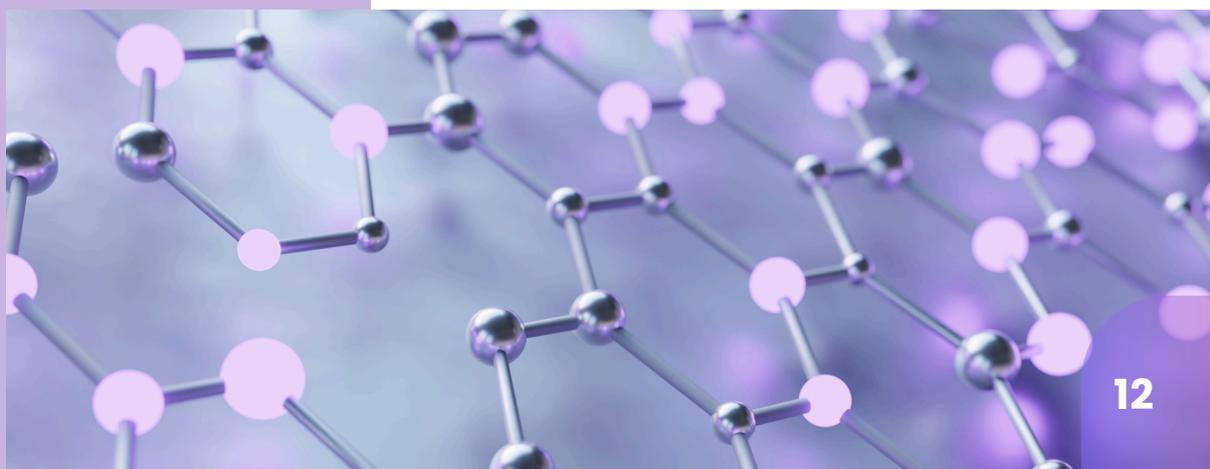


Scientists have been trying from decades to know the structures of these proteins using various methods like X-ray Crystallography, NMR Spectroscopy, Cryo-EM, etc but all these came with their own limitations like they were time consuming, very expensive, can predict only a small size of protein structure. For reference the first protein whose 3D structure was determined in 1958 took 6 years.

Till 2020 almost 1,80,000 protein structures were discovered, but by 2024 over 20 crore protein structures have been predicted. The reason; development in cutting edge technologies like AI and Bio-Technology. One of the recent technology to contribute in this was AlphaFold, for which the developer has also won Nobel Prize in Chemistry along with two other members, none other than Demis Hassabis, co-founder DeepMind. This AI Model has predicted all protein structure possible to exist in nature by simulating the rules of Chemistry.

Protein discovery brings humanity some of the greatest superpowers to solve the biggest challenges we have ever faced like from climate change to healthcare and to even pollution; like, by making cure of diseases such as HIV/AIDS, cancer, developing effective vaccines for malaria, new variants of older viruses, cure genetic errors in human genes, etc. We can create special microorganisms who can feed on plastic, non bio-degradable wastes, etc, plants and trees which can withstand extreme climates and, a bacteria which can feed on pollutants and convert it into fresh air might not be a long story after it. The applications are endless.

So, next time if you get a new fruit in the market you have never seen or you get shot of a new vaccine, do understand that a new protein has unfolded.





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