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# DIGIFLASH PROUDLY PRESENTS

# DIGITIMES

**DEPARTMENT OF COMPUTER SCIENCE AND  
ENGINEERING**

**2023 - 24 ISSUE 1**



**DECEMBER 2023**

## VISION OF THE DEPARTMENT

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To develop engineers with global employability, entrepreneurship capability, research focus and social responsibility.

## MISSION OF THE DEPARTMENT

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- To develop internationally competent engineers in dynamic IT field by providing state-of-art academic environment and industry driven curriculum.
- To motivate and guide students to take up higher studies and establish entrepreneurial ventures.
- To enrich the department through committed and technically sound faculty team with research focus in thrust areas.
- To undertake societal problems and provide solutions through technical innovations and projects in association with the industry, society and professional bodies.

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## Programme Educational Objectives (PEOs)

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**PEO 1: Domain Expertise** - Possess expertise and emerge as key players in IT integrated domains.

**PEO 2: Computing Skills and Ethics** - Employ computing skills to solve societal and environmental issues in an ethical manner.

**PEO 3: Lifelong Learning and Research** - Involve in lifelong learning and research to meet the demands of global technology.

# Programme Outcomes (POs)

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**PO1.Engineering Knowledge :** Apply the knowledge of Mathematics,Science, engineering fundamentals and concepts of Computer Science to solve complex engineering problems.

**PO2.Problem Analysis :** Identify, review literature, formulate and analyse complex engineering problems using first principles of mathematics and engineering sciences.

**PO3.Design and Development of Solutions :** Design and develop computing solutions for complex engineering problems with societal and environmental awareness.

**PO4.Complex problem Investigation :** Investigate complex problems by employing research methods to arrive at valid conclusions.

**PO5.Modern Tool Usage :** Evaluate and use appropriate tools and techniques in engineering activities .

**PO6.Societal contribution :** Follow professional engineering practice by applying contextual knowledge to assess societal and legal issues.

**PO7.Environment and Sustainability :** Understand and provide professional engineering solutions taking into consideration environmental and economic sustainability.

**PO8.Ethics :** Follow ethical principles and norms in engineering practice.

**PO9.Individual and Team work :** Function effectively as an individual, team member or leader in diversified environments.

**PO10.Communication :** Communicate effectively through various modes for all engineering activities.

**PO11.Project Management and Finance :** Apply Engineering knowledge and management principles for effective project management in multi-disciplinary environments.

**PO12.Life-long Learning :** Engage in independent life-long learning and skill development for professional and social well being.

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# Programme Specific Outcomes (PSOs)

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**PSO1.Systems Engineering:** Employ software engineering principles in the design and development of efficient systems

**PSO2.Knowledge Engineering:** Apply data analytics techniques for solving real world problems.

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# GENERATIVE AI IN EARLY CANCER DETECTION



## Introduction

Cancer is globally an incurable disease. Death due to cancer is next to death due to cardiac diseases. According to GLOBOCAN 2020 database, approximately 19.3 million new cases and 10 million deaths has been reported annually. Early cancer prediction strategy is a boon in the medical world. Artificial intelligence with Machine Learning Algorithms and Deep Learning concepts that supports early cancer detection and prevention are going to cause a great medical revolution.

## AI in Medical Field

AI with Machine Learning Algorithms stimulates human “cognition” in the examination, presentation and understanding of complicated health and medical care data. The basic objective of AI is to examine the relationship between patient outcomes and clinical procedures.

The Generative AI systems identify behavioral patterns and generate their own reasoning. Currently AI is used in diagnostic procedures, medication development, customized medicine, patient monitoring and treatment protocols formation

## AI in Cancer Detection

Tests like mammograms and Pap tests are used to regularly check people for signs of cancer or precancerous cells that can turn into cancer. The goal is to catch and treat cancer early, before it spreads or even before it forms at all. Scientists have developed AI tools to aid screening tests for several kinds of cancer, including breast cancer. AI-based computer programs have been used to help doctors interpret mammograms for more than 20 years, but research in this area is quickly evolving.

One group created an AI algorithm that can help determine how often someone should get screened for breast cancer. The model uses a person's mammogram images to predict their risk of developing breast cancer in the next 5 years. In various tests, the model was more accurate than the current tools used to predict breast cancer risk. NCI researchers have built and tested a deep learning algorithm that can identify cervical precancers that should be removed or treated. In some low-resource settings, health workers screen for cervical precancer by inspecting the cervix with a small camera. Although this method is simple and sustainable, it is not very reliable or accurate.

For colon cancer, several AI tools have been shown in clinical trials to improve the detection of precancerous growths called adenomas. However, because only a small percentage of adenomas turn into cancer, some experts are concerned that such AI tools could lead to unnecessary treatments and extra tests for many patients.

## Early Cancer Detection

AI has also shown the potential to improve cancer detection in people who have symptoms. The AI model developed by Dr. Turkbey and his colleagues in NCI's Center for Cancer Research, for instance, could make it easier for radiologists to pick out potentially aggressive prostate cancer on a relatively new kind of prostate MRI scan, called multiparametric MRI. The NCI team's AI model can make the learning curve easier for practicing radiologists and can minimize the error rate. The AI model could serve as "a virtual expert" to guide less-experienced radiologists learning to use multiparametric MRI, he added.

For lung cancer, several deep learning AI models have been developed to help doctors find lung cancer on CT scans. Some noncancerous changes in the lungs look a lot like cancer on CT scans, leading to a high rate of false-positive test results that indicate a person has lung cancer when they really don't. Experts think that AI may better distinguish lung cancer from noncancerous changes on CT scans, potentially cutting the number of false positives and sparing some people from unneeded stress, follow-up tests, and procedures. For example, a team of researchers trained a deep learning algorithm to find lung cancer and to specifically avoid other changes that look like cancer.

## Choice of Cancer Treatment

Doctors use imaging tests to understand cancer's growth, spread, and recurrence likelihood, aiding in treatment decisions. Studies suggest AI can extract such prognostic information from scans with greater precision. For instance, Dr. Harmon and her team developed a deep learning model predicting additional treatment needs for bladder cancer patients. About 50% of muscle-invasive bladder cancer cases have undetectable clusters that can cause relapse if not removed.

## Conclusion

AI and ML have a great impact on healthcare and will continue to reshape this field. The potential in the field of oncology is tremendous and has applications in almost every aspect of cancer research including diagnosis, prognosis, and treatment. The obstacles associated with this threatening disease will undoubtedly be overcome one day with the help of these algorithms.

# GENERATIVE AI IN DRUG DISCOVERY



## Introduction

The domain of medical science is constantly struggling to identify new treatments for a wide range of diseases. Traditionally, more time was needed to analyze a disease and to discover a suitable drug to deal with it, and also it required significant resources to bring a single medication to market. However, in recent years, emerging technology particularly the generative AI, has brought about a tremendous revolution in the field of pharmaceuticals. This article explores the progressive impact of generative AI in drug discovery and also highlights numerous ways of identifying and developing new drugs.

## Generative AI in Drug Discovery

Generative AI algorithms, such as Generative Adversarial Networks (GANs) and Variational Auto Encoders (VAEs)

have emerged as powerful tools in drug discovery. Generative AI algorithms have the unique ability to analyze the distinct components of chemical compounds and biological interactions, identifying patterns and relationships that human researchers may overlook. Generative AI algorithms can rapidly generate thousands or even millions of virtual compounds, used for identification of biological activities and drug properties.

## Identification of Novel Drugs

Novel drugs are innovative products that serve previously unmet medical needs. These drugs help in advance patient care and public health. Generative AI significantly reduces the time and resources required for the identification of potential drug candidate. By utilizing machine learning techniques, these algorithms generates novel molecular structures with desired properties.



This enables the researchers to accelerate the identification of novel drug candidates and bring new medications to the market more quickly and economically.

## Navigating Biological Systems

The interaction of drugs is notable factor in identifying a medicine to treat. It is a complex thing to understand the interaction of drugs in the human body that involves various organs and tissues. Generative AI enables researchers to predict the molecular composition and the reactions of drugs by simulating drug reactor receptor interactions and metabolic pathways. It eases the safety concerns early in the drug development process and helps the researchers in navigating the complex human biological systems so that a suitable drug can be discovered and suggested.

## Optimization in drug design

Generative AI facilitates targeted drug designing criteria. It provides the specified desired molecular properties and therapeutic targets by using specific criteria, like binding affinity to a particular protein or metabolic stability. It can generate the applicable structures that meets the defined requirements. This method of approach allows researchers just to concentrate their efforts on the compounds that have the highest therapeutic efficiency and also reduces the extensive experimental validation and optimization in the field of discovering the tailored drug.

## Ethical considerations and challenges

The use of generative AI in drug discovery also raises important ethical and regulatory considerations.

As AI algorithms gradually generate the novel compound there arises a question regarding the intellectual property rights and ownership of generated molecular compounds. Ethical concerns, such as data privacy and algorithmic bias, must be carefully addressed to ensure responsible and equitable use of AI-driven technologies. Further, the regulatory agents must develop frameworks for evaluating the safety of the drugs generated by AI, ensuring those drugs meet the rigid standards for approval and commercialization.



## Do You Know?

What role do neural networks play in generative AI for drug discovery?

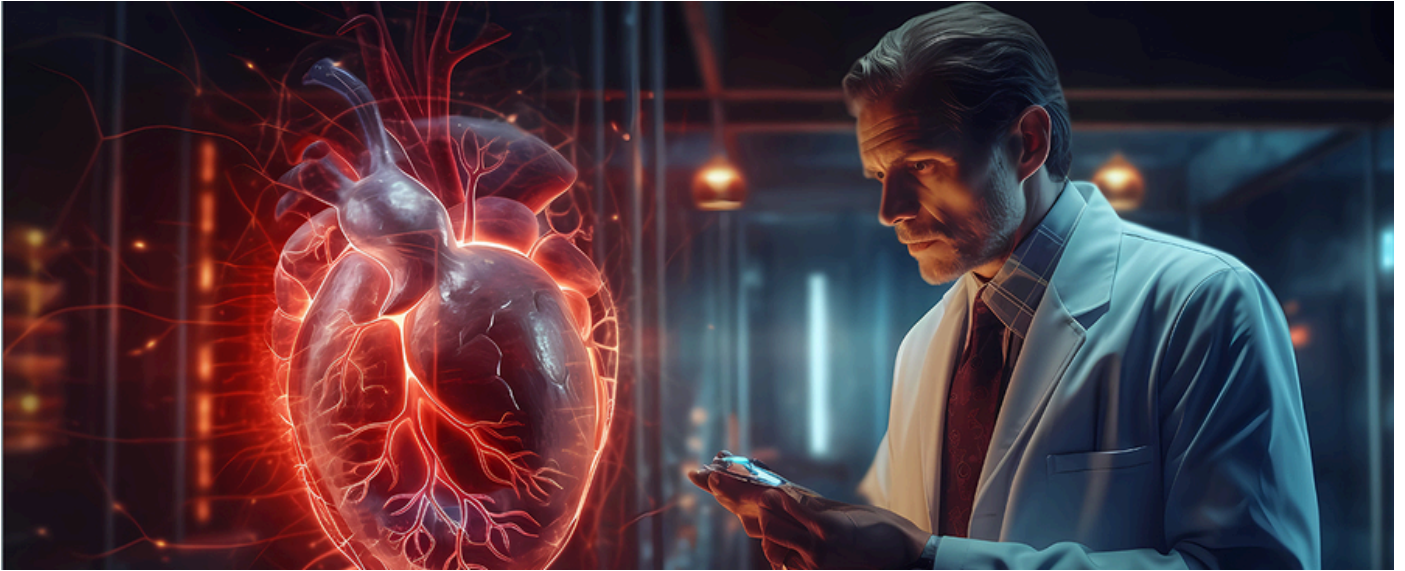
Neural networks, particularly deep learning models, are fundamental in generative AI for drug discovery. They are used to model complex relationships in the chemical space and generate new molecular structures. Techniques like recurrent neural networks (RNNs) and graph neural networks (GNNs) are commonly used to handle sequential and structural data of molecules.

## Conclusion

Generative AI implements the power of machine learning and computational modelling so that in this field it continuously improves the discovery of drugs and pharmaceutical innovations and the patient outcomes by advancing human health. Thus Generative AI unlocks its full potential in drug discovery that is needed significantly to monitor and advance the healthcare system.



# GENERATIVE AI: HEART TRANSPLANTATION



## Introduction

Heart transplantation stands as a beam of hope for people fighting against end-stage heart failure, offering a chance at renewed life and energy. Yet, the trip towards a successful transplant is filled with challenges, from the difficulties of donor-receiver matching to the difficult aspects about after-transplant care.

In this context, Generative AI has emerged as a powerful tool that effectively handles various difficulty.

## Uncovering the Power of Generative AI

At its core, generative AI represents a ideal change in computer-based intelligence, taking advantage of advanced sets of computer instructions to carefully study huge datasets and create new ideas. In the world of heart transplantation,

this technology holds the possible ability to totally change and improve every stage of the transplant process, from donor selection to post operation management.

## Optimizing Donor-Receiver Matching

Central to the success of any heart transplant is the compatibility between donor and receiver. Generative AI, armed with smart machine learning sets of computer instructions, researches deep into the details of donor qualities, receiver profiles, and immunological factors to identify the best match. By capturing and controlling the power of data-driven decision-making, generative AI improves the chance of successful transplant results while shortening the risk of rejection.

## Personalized Treatment- Success plans

No two patients are alike, and their response to heart transplantation can differ significantly. Generative AI gives power to healthcare providers to create treatments with a personal touch by analyzing a large amount of data, including data related to tiny chemical assembly instructions inside of living things, medical histories, and imaging studies. By creating custom-designed models, generative AI enables doctors to look ahead to possible difficulties and improve as much as possible after-transplant care, improving patient results and improving quality of life.

## Real-Time supervising

The process does not end with the transplantation surgery; rather, it marks the beginning of a lifelong loyalty to after-transplant care. Generative AI plays an important role in this by helping supervision. By carefully studying patient data streams, including pulse rate, blood pressure, etc., biomarkers, and medicine loyalty, generative AI enables early detection of difficulties, appropriately-timed action that helps a bad situation, suggesting changes to treatment or habits, and improving long-term outlook.

While the possible power or ability within generative AI in heart transplantation is vast, its use into medicine-based practice is not without challenges. Data privacy concerns, and computer-related biases must be carefully looked at to make sure of fair and responsible use of this technology. More than that, working team effort between using different kinds of expert knowledge teams, including doctors, data scientists, and ethicists, is extremely important for capturing and controlling the full possibility of generative AI in transplantation medicine.

## Looking Ahead: A Vision for the Future

As we stand almost at a new time in history in healthcare, fueled by the super-important power of generative AI, the line in the distance where the Earth and sky meet brims with promise and possibility. By supporting invention of new things, helping the development of working team effort, and putting in order of importance patient-centric care, we can capture and control the full ability of generative AI to totally change and improve heart transplantation and bring in a time in history of never-before-seen success and hope for patients worldwide.

In the end, generative AI stands as a guiding light of hope in the world of heart transplantation, offering a pathway decorated with a personal touch care, improved results, and renewed hope for people in need.



### Do You Know?

How does generative AI improve donor-recipient matching in heart transplantation?

Generative AI can analyze vast amounts of data to identify patterns and predict compatibility more accurately than traditional methods. It can consider multiple factors such as tissue compatibility, blood type, size of the donor heart, and immunological factors to recommend the best matches.

# GENERATIVE AI IN DERMATOLOGY



## Introduction

In the field of healthcare, artificial intelligence has created a greater impact, particularly in dermatology, where the establishment of AI is reshaping the landscape of skincare diagnosis and treatment. Dermatology is a branch of medicine that is related to the study and treatment of skin disorders, and hugely relies on visual inspection and pattern recognition that are used for identifying diagnosis.

Generative AI gives access to some of the sophisticated tools that are used for diagnostic identification capabilities. Unlike traditional AI, Generative AI has the ability to create new content based on the patterns learned from existing data. In dermatology, this means generating synthetic images of skin lesions (wound), which can aid in diagnosis and treatment planning.

## Applications of AI in Dermatological Sector

There are several applications of generative AI in Dermatology. In skin lesion detection and classification, Algorithms were trained on vast datasets that can accurately detect and classify skin lesions, assisting dermatologists particularly in early diagnosis and intervention.

In Dermatological Image Synthesis and virtual Try-On for the skincare products, generative AI can synthesize realistic images of skin conditions, providing invaluable resources for medical education and training. Also, consumers can visualize the effects of skincare products on their skin through virtual Try-On applications powered by generative AI.



## Enhanced Diagnostic Accuracy

AI can offer personalized treatment recommendations, by analysing the patient's data according to the individual skin types and conditions. Furthermore, AI-enabled virtual assistants offer personalized skincare recommendations and lifestyle modifications, empowering individuals to proactively manage their dermatological health and prevent recurrence of skin conditions.

Another important fact is that AI may influence the development of smart gadgets, such as mirrors or cameras, equipped with generative AI technologies to evaluate skin health and recommended suitable treatments. AI algorithms integrate multimodal data sources, including clinical images, histopathological findings, and patient-reported outcomes, to provide comprehensive diagnostic insights and treatment recommendations.

Looking ahead to the great future of generative AI in dermatology and by continued research and collaboration among clinicians and researchers paves the way for improved patient outcomes and also enhanced skin health management.



### Do You Know?

How is generative AI transforming dermatology?

Generative AI is revolutionizing dermatology by enabling more accurate and efficient diagnosis of skin conditions through advanced image analysis and predictive modeling, potentially leading to improved patient outcomes and personalized treatment plans.



## Conclusion

The integration and establishment of generative AI in obstetrics represents a significant milestone in the quest for more effective and personalized maternal care solutions. Generative AI has the potential to revolutionize prenatal care by analyzing large datasets to identify patterns and predict outcomes, thereby assisting healthcare professionals in making informed decisions. For instance, AI can help in early detection of conditions such as gestational diabetes and preeclampsia, enabling timely interventions that can save lives. Additionally, generative AI can assist in the creation of personalized treatment plans tailored to the unique needs of each patient, ensuring that both mothers and babies receive the best possible care.

Moreover, through the power of AI, obstetricians can better serve their patients by providing more accurate diagnoses and personalized care plans, thus reducing the likelihood of complications during pregnancy and childbirth. This advancement not only enhances patient outcomes but also alleviates the workload on healthcare providers by automating routine tasks and offering data-driven insights. As the field of obstetrics embraces these innovative technologies, it moves into a new era of precision medicine, where the health and safety of mothers and their babies are significantly improved through advanced, data-driven care solutions.



# GENERATIVE AI IN OBSTETRICS



## Introduction

The sector of obstetrics is witnessing a transformative generation with the emergence of generative artificial intelligence (AI). This technological advancement holds large capability in improving maternal and fetal fitness consequences. Generative AI, with its capacity to analyze complex statistics sets and predict results, gives a promising road for customized and proactive obstetric care. In this article, we delve into the impact of generative AI on obstetrics, exploring its applications, benefits, challenges, and destiny potentialities.

## Personalized Pregnancy Care

Generative AI's influence on obstetrics is most glaring within the realm of customized pregnancy care. By way of leveraging superior algorithms, this era can analyze sizeable

datasets encompassing maternal health records, genetic records, and environmental factors. It enables a holistic know-how of an person's health, permitting healthcare carriers to expect ability complications. From identifying genetic predispositions to thinking about lifestyle factors, these algorithms offer a complete hazard evaluation that provides the basis for a personalized care plan. This proactive method permits healthcare specialists to intrude early, mitigating dangers and making sure a safer.

## Predictive Risk Assessment

One of the maximum promising programs of generative AI in obstetrics lies in predictive danger assessment, via the analysis of large datasets, AI algorithms can perceive styles indicative of complications along with preterm beginning, gestational diabetes, and preeclampsia.

Early detection of these risks enables healthcare specialists to put in force well timed interventions, in the end reducing the probability of damaging outcomes. This information-pushed approach positions obstetricians to provide anticipatory steering, making ready expectant moms for ability challenges at some point of their pregnancy.



## Remote Monitoring and Telemedicine

Generative AI revolutionizes obstetric care via facilitating far flung monitoring and telemedicine. In conditions wherein in-person visits are challenging, AI-pushed far off tracking allows healthcare vendors to track vital symptoms, fetal improvement, and other relevant parameters. Integrating generative AI with telemedicine structures enables real-time conversation between patients and healthcare experts, fostering extra comprehensive and on-hand obstetric care. This innovation is specially valuable for pregnant people in rural regions, ensuring they receive non-stop and well timed care.

## Ethical Considerations and Patient Empowerment

As generative AI will becomes ingrained in obstetric practices, ethical considerations take center level. Striking a sensitive stability between statistics-driven decision-making and preserving patient autonomy is imperative.

Transparency in how AI algorithms inform care decisions is crucial for building agreement among healthcare vendors and pregnant people. Moreover, safeguarding the safety and privateness of personal health statistics is paramount to make sure the moral use of generative AI in obstetrics. Empowering sufferers with a clear know-how of the way AI contributes to their care fosters collaboration and shared choice-making, ultimately improving the general obstetric care.

## Conclusion

Generative AI stands as a modern force in obstetrics, supplying extraordinary insights, predictive capabilities, and personalized interventions. While its capacity is substantial, moral, privateness, and regulatory issues must guide its integration into obstetric practices. Collaborative efforts among healthcare professionals, technologists, and policymakers are critical to harness the total capacity of generative AI in optimizing maternal and fetal health consequences. The destiny of obstetrics lies the intersection of generation and compassionate, patient-focused care, with generative AI serving as a effective ally on this transformative adventure.



### Do You Know?

How can generative AI improve prenatal care and diagnosis in obstetrics?

Generative AI can analyze vast amounts of medical data to predict potential complications, recommend personalized treatment plans, and assist in the early detection of conditions such as preeclampsia, thereby enhancing maternal and fetal health outcomes.

# USING GENERATIVE AI TO UNLEASH THE POWER OF AGENCY IN MARKETING AND AI



## Introduction

Generative AI is a branch of artificial intelligence that focuses on the capacity of machines to produce ideas, answers, or other content on their own. Advances in deep learning and neural networks have accelerated this development by allowing machines to learn, comprehend, and mimic human-like behavior's. This newly acquired skill has great potential for solving issues in a variety of fields. Generative AI is starting to change the marketing landscape. Utilizing this technology, agencies are improving customer experiences, streamlining marketing strategies, and producing dynamic and personalized content. Marketing professionals can make data-driven decisions and optimize campaigns for increased reach and engagement by incorporating AI-driven insights.

## The Function of Agency in Problem-Solving

The ability to act purposefully and make decisions is referred to as agency when discussing problem-solving. It is the engine that propels creativity and the capacity to overcome obstacles. In marketing, agencies are essential for telling gripping stories, analyzing consumer behavior, and creating tactics that appeal to target markets. Traditional and digital agencies alike are realizing more and more that incorporating AI into their daily operations is essential to maximizing their capacity for problem-solving. Marketing agencies can use generative AI to automate repetitive tasks, freeing up human resources to concentrate on creativity and strategic thinking. This change enables marketers to use their agency where it counts most in creating distinctive, captivating content for audiences.



## AI's Effect on Operations at Marketing Agencies

It's crucial to investigate the precise ways in which AI is changing agency operations and examine the mutually beneficial relationship between agencies and AI in marketing.

### Automated Data Analysis

The ability to process enormous volumes of data quickly is one of the main advantages of integrating AI into marketing agencies. AI systems are capable of analyzing competitor strategies, market trends, and consumer behavior to provide insightful information that helps with decision-making. The agency is better equipped to comprehend the nuances of the market environment thanks to this automated data analysis, which helps them create marketing strategies that are both focused and successful.

### The Emergence of Generative AI

Generative AI has rapidly evolved, allowing machines to autonomously generate creative content. This advancement is largely due to progress in deep learning and neural networks, which enable machines to learn from vast amounts of data, comprehend complex patterns, and mimic human-like behavior. In the marketing landscape, generative AI is proving to be a game-changer. Agencies are utilizing this technology to streamline their operations, enhance customer interactions, and create personalized marketing content. This shift is empowering marketing professionals to make more informed decisions and optimize their strategies for better results.

### The Function of Agency in Problem-Solving

Agency, in the context of problem-solving, refers to the capacity to act purposefully and make decisions.

It drives creativity and the ability to overcome challenges. In marketing, agencies play a crucial role in crafting compelling narratives, analyzing consumer behavior, and devising strategies that resonate with target audiences. Both traditional and digital agencies are increasingly recognizing the importance of incorporating AI into their operations to enhance their problem-solving capabilities. By automating repetitive tasks, generative AI frees up human resources to focus on creativity and strategic thinking. This allows marketers to leverage their agency where it matters most—creating unique, engaging content for their audiences.



## AI's Impact on Marketing Agency Operations

### Automated Data Analysis

One of the primary advantages of integrating AI into marketing agencies is the ability to process vast amounts of data swiftly. AI systems can analyze competitor strategies, market trends, and consumer behavior to provide valuable insights that inform decision-making. This automated data analysis equips agencies with a deeper understanding of the market landscape, enabling them to develop targeted and effective marketing strategies.

### Personalized Content Creation

Generative AI excels at producing content tailored to individual user preferences. Marketing agencies can harness this capability to design highly targeted campaigns that appeal to specific audience segments. By customizing content to meet the unique needs and preferences of their clients, agencies can boost engagement and build lasting relationships with their target audience.



## Enhanced Customer Engagement

AI-driven chatbots and virtual assistants are becoming integral components of customer engagement strategies. These intelligent systems can interact with customers in real time, answering queries, providing information, and even facilitating transactions. This not only enhances customer satisfaction but also allows marketing agencies to deliver more responsive and seamless client experiences.



## The Synergy of Agency, Marketing, and AI

The true power lies in the collaboration between agency, marketing, and AI. With AI-driven insights, marketing professionals can strategically apply their agency to create impactful campaigns. This synergy enhances human agency rather than replacing it, enabling marketers to make informed decisions, unleash their creativity, and navigate the complexities of the digital landscape with precision.

## Challenges and Ethical Considerations

While the integration of generative AI in marketing agencies offers numerous benefits, it also presents challenges and ethical considerations. As AI-generated content increasingly mimics human expression, the distinction between human and machine-generated content blurs. This raises issues of authenticity, transparency, and potential misuse.

Marketing agencies must navigate these challenges responsibly by adhering to ethical standards and ensuring transparency in their AI usage. Marketers have the agency to make ethical decisions, ensuring AI is utilized in ways that align with societal norms and values.

## The Future Landscape

Looking ahead, the development of generative AI will continue to shape problem-solving in the marketing industry. Marketing agencies that embrace and wisely utilize this technology will lead in innovation. The ability to combine human agency with AI capabilities will be crucial for effective marketing strategies in the digital age. Marketing professionals must stay abreast of technological advancements, continually update their skills, and adapt to the ever-changing landscape. The symbiotic relationship between agency, marketing, and AI will redefine the industry, offering unprecedented opportunities for creativity, efficiency, and effectiveness.

## Conclusion

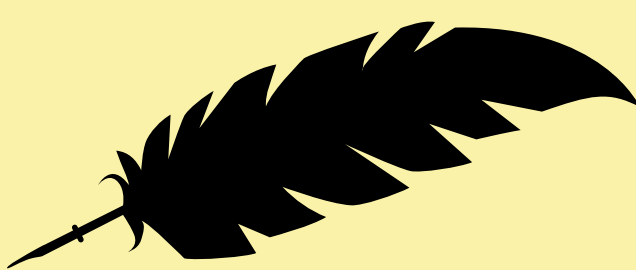
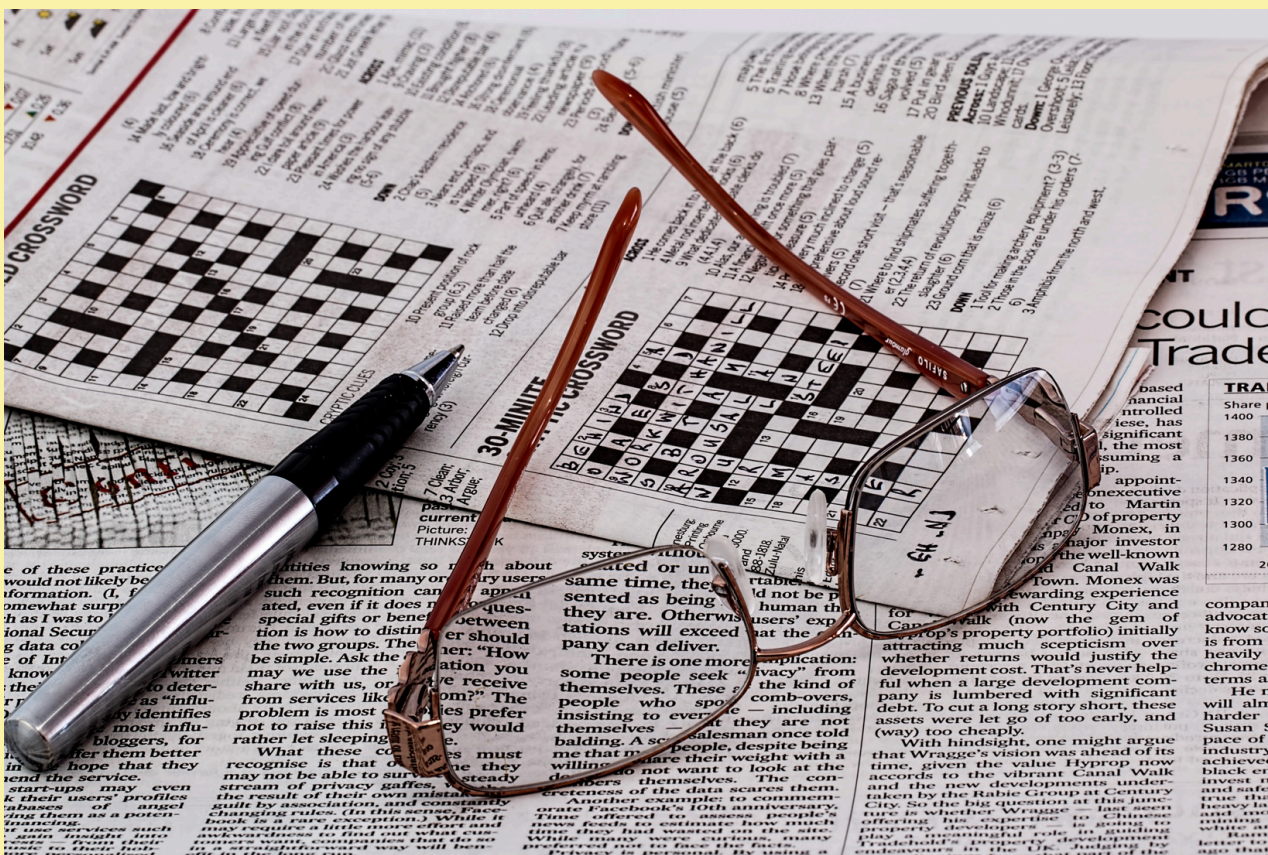
The convergence of agency, marketing, and AI has significantly transformed problem-solving approaches in the marketing industry. Generative AI enables marketing agencies to strategically exercise their agency, creating campaigns that deeply resonate with consumers. The dynamic interaction between AI-driven insights and human creativity opens new avenues for marketing innovation. As we navigate this transformative landscape, it is imperative for marketing professionals and agencies to embrace the potential of generative AI while remaining mindful of ethical considerations. The integration of AI and human agency will unlock unparalleled levels of creativity and impact in marketing problem-solving, heralding a new era of possibilities.

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# RIDDLES AND FACTS





# RIDDLES

1. I am a code whisperer, a language of logic and order. I bring life to machines, translating human thoughts into action. What am I?
2. I am a treasure map for programmers, guiding them through the logic of a program. What am I?
3. What do computers snack on?
4. What's the object-oriented way to become wealthy?
5. What's a hacker's favorite type of exercise?
6. Which programming language is known for its use in statistical computing and graphics?
7. Which programming language is primarily used for building iOS and macOS applications?
8. Which programming language was developed by Microsoft and is widely used for web development?
9. Which data structure uses First-In-First-Out (FIFO) order?
10. What is the time complexity of binary search on a sorted array?



# FACTS

- The first email was sent in 1971 when the internet did not exist. Only the ARPANET network was there for connectivity.
- CAPTCHA stands for “Completely Automatic Public Turning Test to Tell Computers and Humans Apart.” Even though some artificial intelligence can get through CAPTCHA, it’s still useful in blocking some bots.
- A jiffy is an actual measurement of time, referring to the length of one cycle of the computer’s system clock – about 10 milliseconds.
- In 1991, Tim Berners-Lee was working on developing the World Wide Web. There are no graphics and no background, just plain text and links on how to use the internet!
- The Apple Lisa was the first commercial computer with a Graphical User Interface (GUI) and a mouse.
- On December 3, 1992, a software architect, Sema Group, used a computer to text “Merry Christmas” to a Vodafone employee who was using an Orbital 901 handset.
- The word “Android” literally means a human with a male robot appearance. The female equivalent of this word is a “Gynoid.”
- Norman Joseph Woodland invented the barcode and received a patent in October 1952. Later the barcode was developed to be used for product labeling. Known as the Universal Product Code (UPC), a system that is still used today.
- The world’s first smartphone with a built-in fingerprint scanner was the Motorola Atrix 4G, released in 2011.
- The world’s first barcode was scanned at a supermarket in 1974, and the product was a pack of chewing gum.



# ANSWERS FOR RIDDLES



1 Firewall

2 A Flowchart

3 Microchips

4 Inheritance

5 Phishing

6 R

7 Swift

8 C#

9 Queue

10  $O(\log n)$





# ABOUT DIGITIMES

DigiFlash is the student association of Computer Science and Engineering Department, MCET, Pollachi. The objective of our association is to innovate, create and sharpen the minds of the students to compete globally. It is a platform to improve the student's knowledge and also create opportunities to interact with leading industry persons. Digiflash is organizing number of Co-Curricular activities including special lectures by Experts, Workshops, Technical Seminars, Coding Events, Paper & Poster Presentations and Webinars. Digitimes is a part of Digiflash. A magazine that features the latest Technological advancements in the field of Computing

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