AIIMS AI tool for assist in identifying cancer treatments

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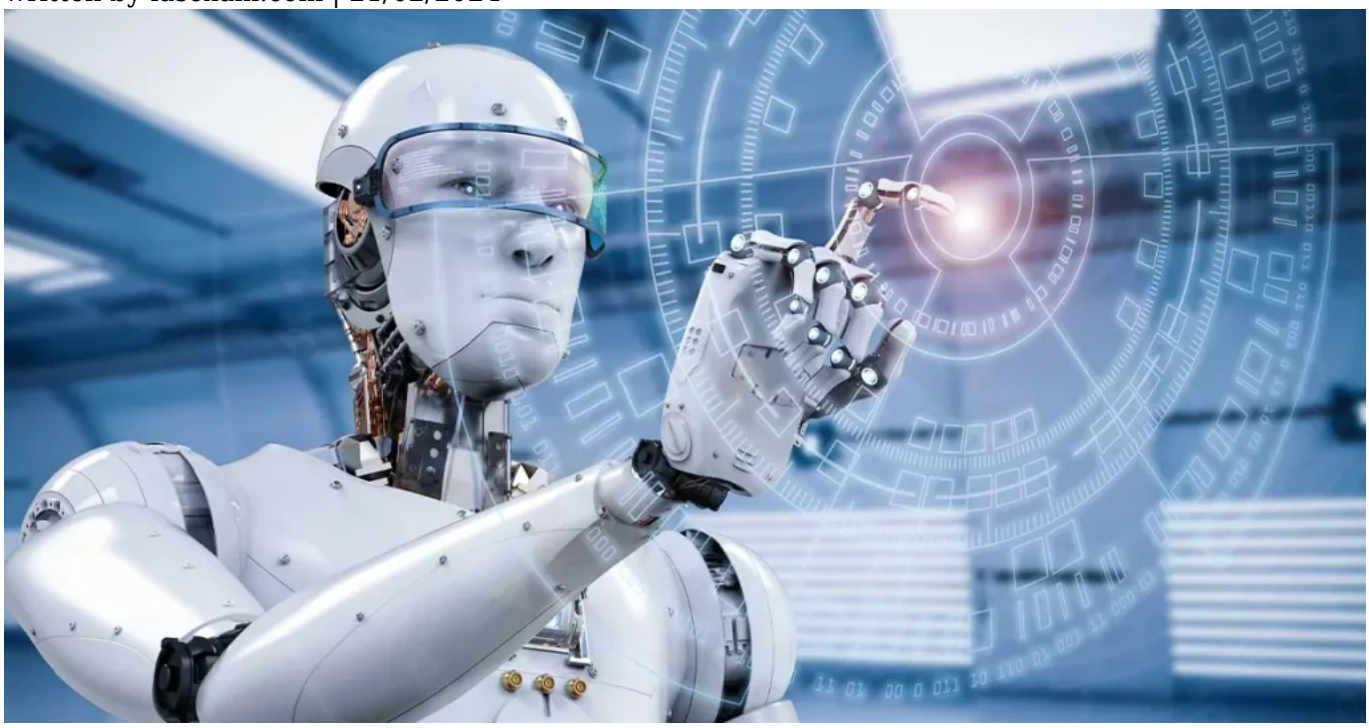

Context:

- Researchers from AIIMS Delhi have developed a supercomputer and AI system called iOncology AI to help identify the most effective cancer therapy for patients.
- This technology uses a supercomputer in Pune and a high-capacity server named Charak I in Jhajjar to analyse genetic mutations in patients and suggest personalised treatment options.

iOncology-AI:

- The iOncology AI project is a collaboration between AIIMS in Delhi, C-DAC in Pune, and the Ministry of Electronics & Information Technology.
- This partnership combines medical and computational expertise to improve cancer care using AI technology.
- The project aims to use AI to improve the accuracy and effectiveness of cancer treatment by analysing large datasets that include genetic information, patient histories, and treatment results.
- It seeks to understand how genetics and cancer treatment interact.

How does the AI tool operate?

- The new platform was developed jointly with Pune's Centre for Development of Advanced Computing and doctors are allowed to store and analyse various cancer-related medical data.

- The AI-driven platform reads and interprets different data types (e.g., medical records), thus enabling physicians to choose the right option.
- This software can help doctors pick the most suitable treatment option for future patients by analyzing the clinical data and genetic information of the previous patients through the platform.
- Furthermore, the platform can also be an aid in resource-constrained situations where genomic studies are not possible yet aiding in the target drug treatment is possible.
- AI can also automatically recognise abnormalities within scans and reports, which helps catch some types of cancer even before its symptoms become apparent.
- This data could lead the oncologists to prevention policies and the creation of standard protocols.

Could the tool possibly address all types of cancer?

- The research will concentrate on five types of cancers that are highly prevalent, deadly, or have immunotherapy treatments available.
- These include breast, ovarian, head and neck, colorectal, and two types of blood cancers.
- Currently, the platform is only trained for breast and ovarian cancer.
- It already possesses different models for predicting CT scans, ultrasound images, histopathology, mammogram images, and detecting and classifying tumours.

Connection between AI and cancer care:

- There is growing global interest in using AI for cancer treatment, as it can assist doctors in various ways such as developing new therapies, diagnosing patients at early stages, and selecting appropriate treatments.
- Studies have shown that certain AI models can identify individuals at high risk of developing pancreatic, breast, and lung cancers earlier than traditional methods.
- Harvard Medical School is developing an AI tool specifically for colon cancer, which will accurately predict survival and provide insights for treatment response based on various data sources.
- This advancement has the potential to revolutionise cancer diagnosis and treatment.

Conclusion:

The iOncology-AI platform offers benefits such as improving cancer patient outcomes and quality of life, reducing the burden and cost of cancer care, enhancing healthcare professionals' efficiency, and contributing to cancer research and innovation.

Source: The Indian Express

UPSC Prelims Practice Question:

Q.With the present state of development, Artificial Intelligence can effectively do which of the following? (2020)

1. Bring down electricity consumption in industrial units

2. Create meaningful short stories and songs
3. Disease diagnosis
4. Text-to-Speech Conversion
5. Wireless transmission of electrical energy

Select the correct answer using the code given below:

a. 1, 2, 3 and 5 only

b. 1, 3 and 4 only

c. 2, 4 and 5 only

d. 1, 2, 3, 4 and 5

Ans : “b”

UPSC Mains Practice Question:

Q. What do you understand about nanotechnology and how is it helping in the health sector? (2020)