ARTIFICIAL INTELLIGENCE

Breakthrough Technologies

Presented by Kanika Sharma

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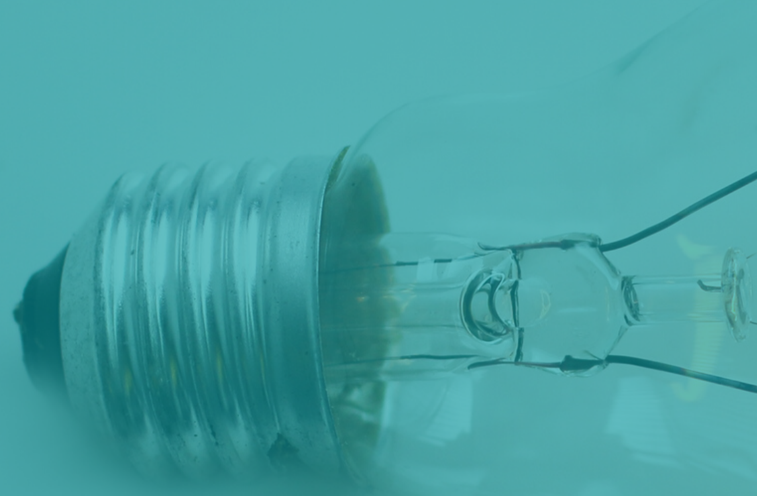

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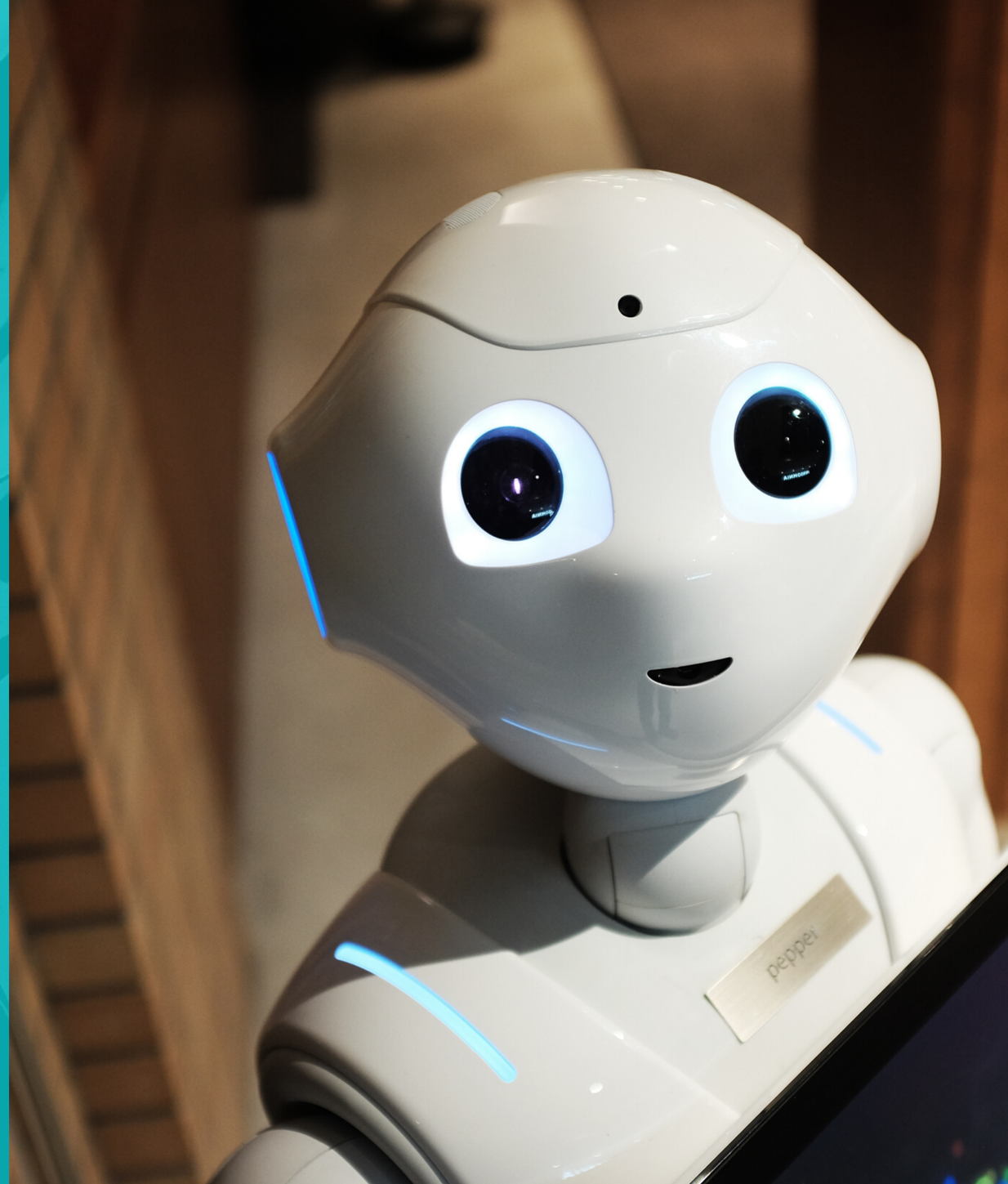
WHAT IS ARTIFICIAL INTELLIGENCE?

The branch of computer science that develops machines and software with human-like intelligence.

- Artificial intelligence (AI) is the intelligence of machines and robots and the branch of computer science that aims to create it.
- The ability to solve problems
- The ability to act rationally
- The ability to act like humans



BUILDING BLOCKS

1941 DEVELOPMENT OF THE ELECTRONIC COMPUTER .
1949 FIRST COMMERCIAL, STORED PROGRAM COMPUTER(PROCESS).
1956 DARTMOUTH CONFERENCE(COINED AS AI).
1958 LISP LANGUAGE DEVELOPED(language of AI).
1963 START OF DOD's ADVANCED RESEARCH PROJECTS.
1968 MICRO-WORLD PROGRAM, SHRDLU CREATED.
1970 FIRST EXPERT SYSTEM(MARKET LAUNCH).
1972 PRO-LOG LANGUAGE REVEALED .
1986 AI BASED HARDWARE SOLD .
1991 AI MILITARY SYSTEMS USED IN DESERT STORM .
1995 AI AS SCIENCE.
2006 FACE RECOGNITION SOFTWARE AVAILABLE IN CONSUMER CAMERAS.
2003-2007 ROBOT DRIVING: DARPA GRAND CHALLENGE.

EFFICIENCY

Can AI System Work As Efficient As Human Brain.

How complicated is our brain?

Neuron .

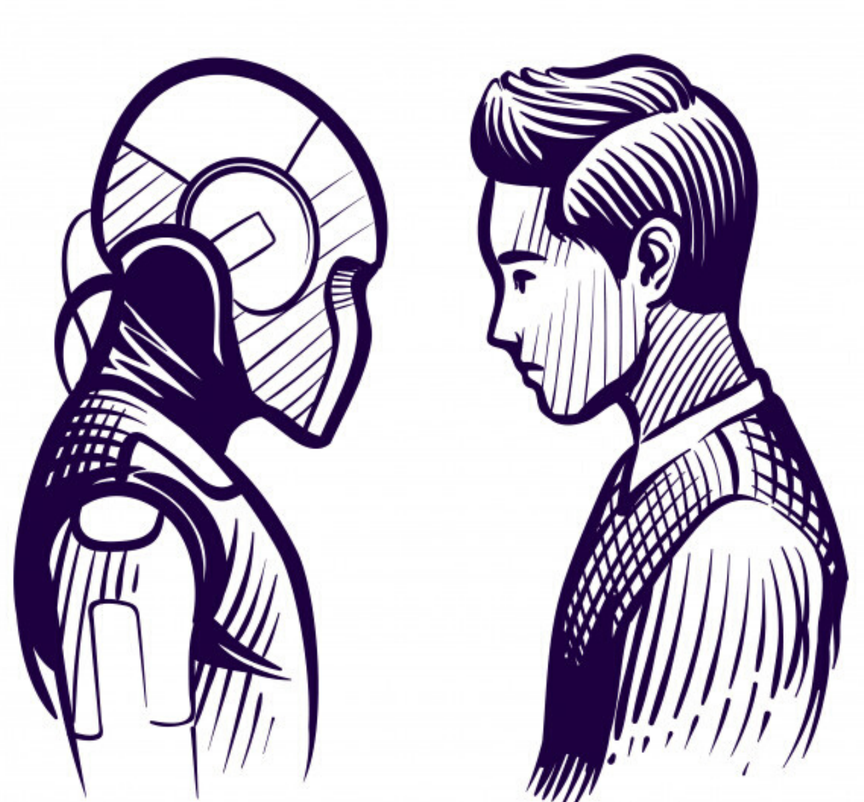
- **10 12 neurons in a human brain**
- **Many more synapses (10 14) connecting these neurons.**
- **Cycle time: 10 -3 seconds (1 millisecond) .**

How complex can we make computers?

- **108 or more transistors per CPU .**
- **Supercomputer: hundreds of CPUs, 1012 bits of RAM .**
- **Cycle times: order of 10 - 9 seconds.**

Conclusion

- **Yes AI can work as efficiently as an Human.**
- **Less interconnections (Wires or Synapses).**



Modes of Communication

Text & Dialogue Based.

Speech Recognition

- **Process of converting sound signal captured by microphone or mobile/telephone to a set of words.**
- **70-100 words / min with accuracy of 90%.**

Computer Vision

- **Ability of a machine to extract information from an image that is necessary to solve a task.**
- **Image Acquisition Image Processing**
- **Image Analysis Image understanding**
- **Intelligent Robot.**
- **Tend to mimic human sensing and decision making abilities so that they can adopt themselves to certain conditions and modify their actions.**

Expert Systems

- **These are Software's used for decision making .**
- **Automated Reasoning and Theorem Proving.**
- **Troubleshooting Expert Systems.**
- **Stock Market Expert System.**

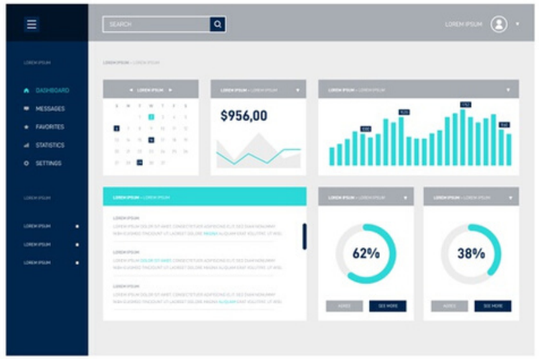
THE LANGUAGE USED IN ARTIFICIAL INTELLIGENCE.

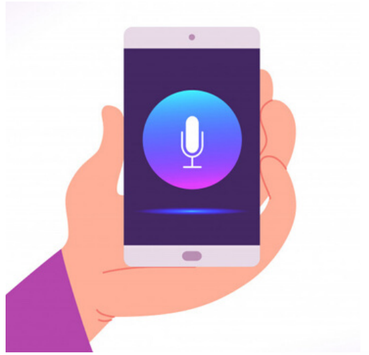
Artificial intelligence researchers have developed several specialized programming languages for artificial intelligence which include IPL, Lisp, Prolog, STRIPS, Planner, POP-11 etc.

NEED

Artificial Intelligence the need of hour.

Many thousands of AI applications are deeply embedded in the infrastructure of every industry."





Fields of AI Computer science:

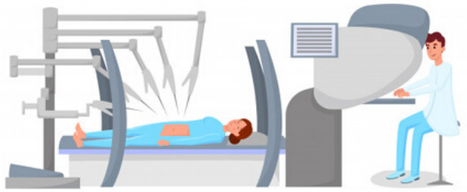
- Graphical User Interface .
- Automatic Storage management.
- Object Oriented Programming .
- Data mining .
- Computer gaming.

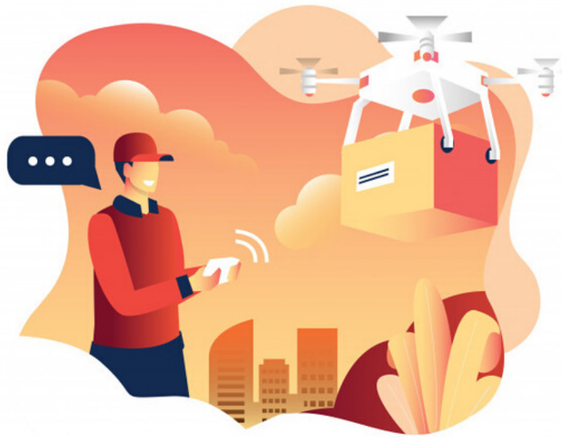
Telecommunication:

- Automated Online Assistants
- Voice dialing
- Speech Recognization

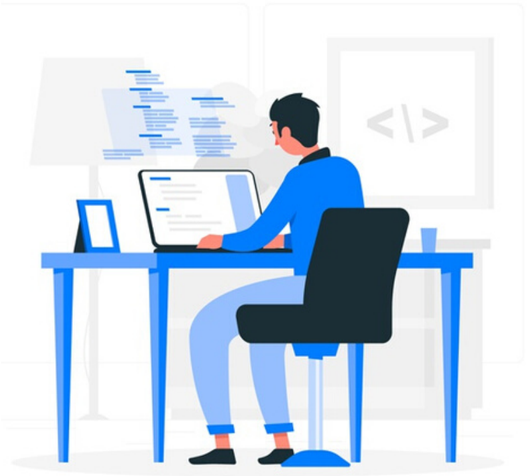
MILITARY:

- Smart bombs .
- Unmanned drone aircraft .
- Decoding of enemy secret codes .
- Rapid translation of foreign language Science.



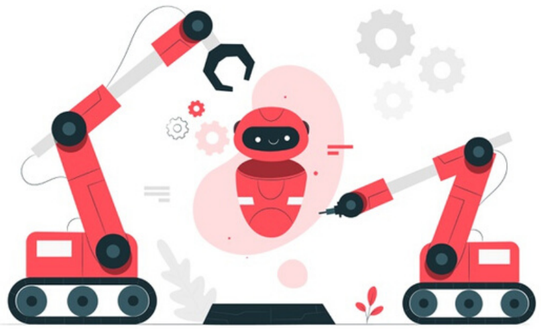


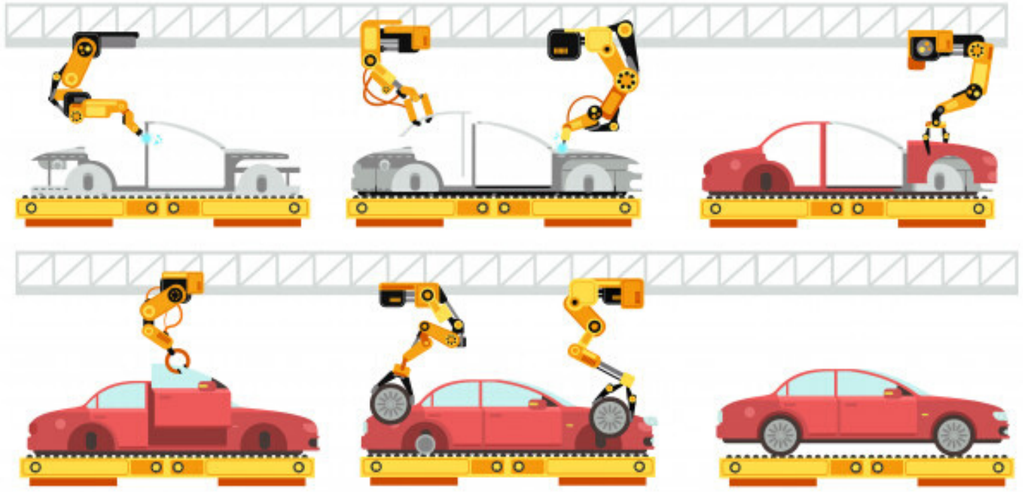
- Development of new drugs.
- Remote controlled surgical procedures.
- Uses robotics and computer-based Optical.



INDUSTRIAL

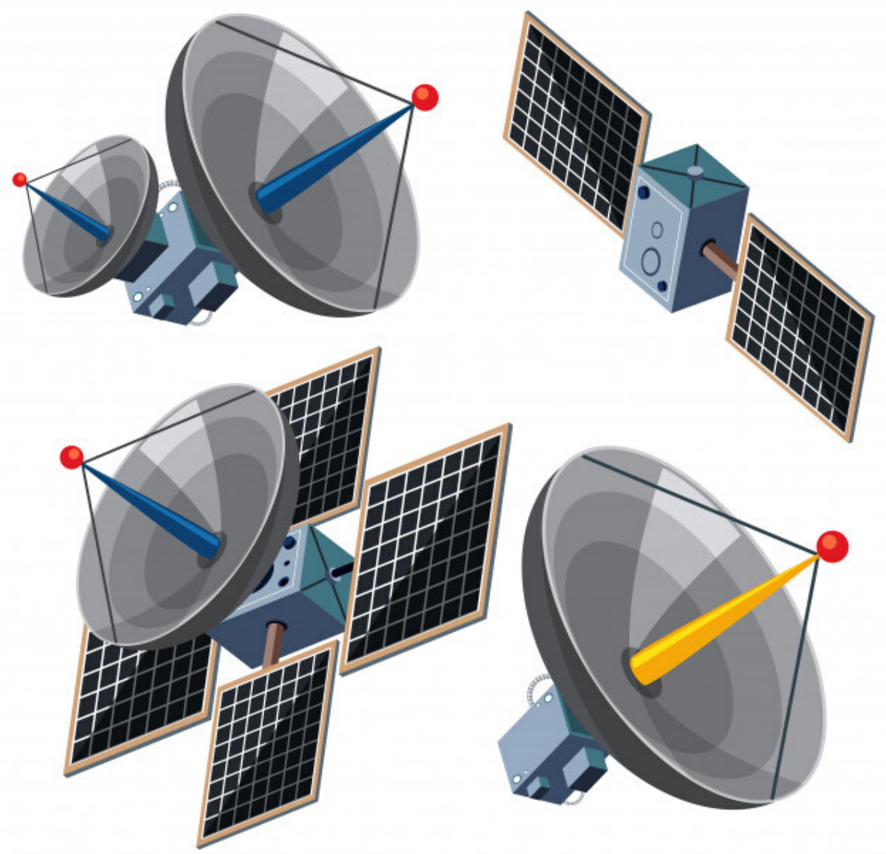
- Machine vision inspection systems .
- Robotic systems .
- Use computer automation and mechanical equipment .
- Take place of humans in manufacturing of cars.
- Personal computers .
- Voice and character recognition.
- Entertainment .
- Games, such as chess, where over 120 million moves can be recognized.

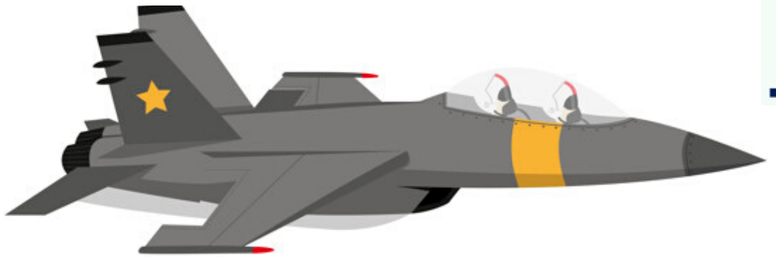




Aviation & Automation:

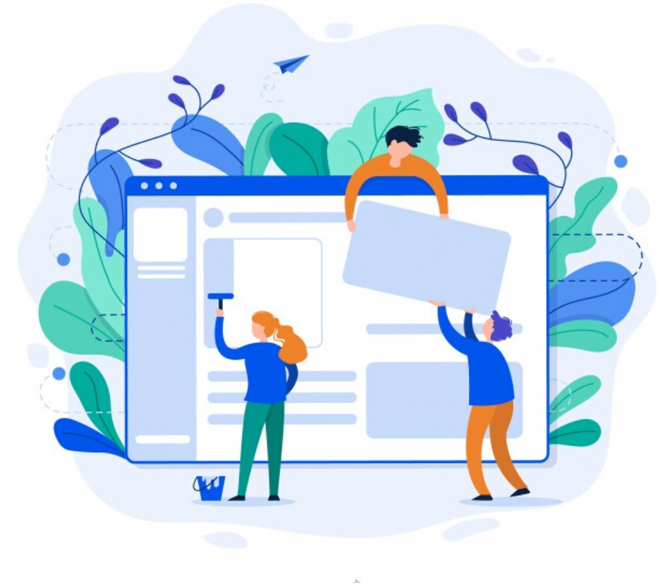
- NASA's fight research center .
- Voice recognition in fighter jets .
- Directions to A.I pilots through air traffic controllers.
- Automatic Gearing System in Cars.

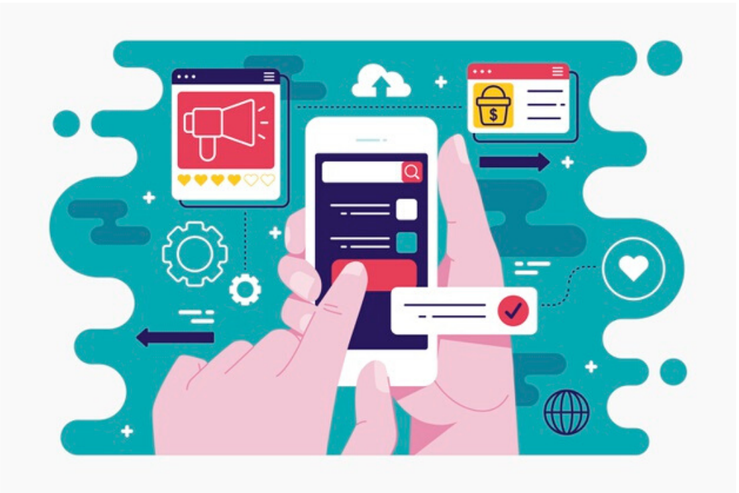




Daily Life Applications

- Home Security
- Bank
- Post office
- Websites
- Digital camera
- News and publishing
- Financial trades
- Health and medicine
- Games and Toys





Drawbacks of A.I.

- Limited Ability.
- Slow Real Time Response.
- Can’t Handle Emergency Situation.
- Difficult code.
- No Replicating Humans.
- High Cost.
- Unemployment.
- No Mind Mapping.

RECAP

In it’s short existence, AI has increased understanding of the nature of intelligence and provided an impressive array of application in a wide range of areas. It has sharpened understanding of human reasoning, and of the nature of intelligence in general. At the same time, it has revealed the complexity of modeling human reasoning providing new areas and rich challenges for the future.

THANK YOU

QUESTIONS? COMMENTS?

LET US KNOW!

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