OMICS GROUP

OMICS Group International through its Open Access Initiative is committed to make genuine and reliable contributions to the scientific community. OMICS Group hosts over 400 leading-edge peer reviewed Open Access Journals and organizes over 300 International Conferences annually all over the world. OMICS Publishing Group journals have over 3 million readers and the fame and success of the same can be attributed to the strong editorial board which contains over 30000 eminent personalities that ensure a rapid, quality and quick review process. OMICS Group signed an agreement with more than 1000 International Societies to make healthcare information Open Access.

OMICS Journals are welcoming Submissions

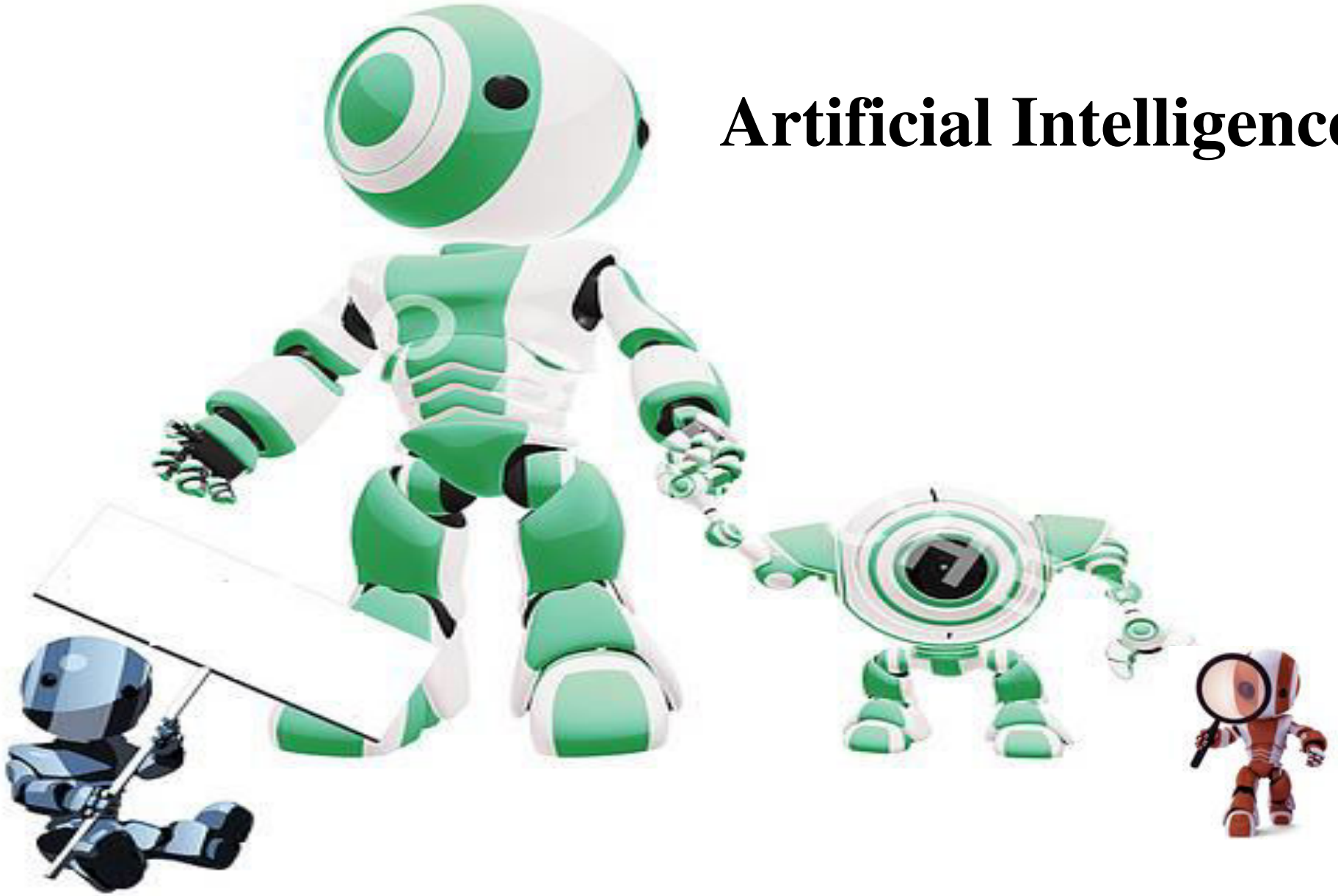
OMICS Group welcomes submissions that are original and technically so as to serve both the developing world and developed countries in the best possible way.

OMICS Journals are poised in excellence by publishing high quality research. OMICS Group follows an Editorial Manager® System peer review process and boasts of a strong and active editorial board. Editors and reviewers are experts in their field and provide anonymous, unbiased and detailed reviews of all submissions.

The journal gives the options of multiple language translations for all the articles and all archived articles are available in HTML, XML, PDF and audio formats. Also, all the published articles are archived in repositories and indexing services like DOAJ, CAS, Google Scholar, Scientific Commons, Index Copernicus, EBSCO, HINARI and GALE.

For more details please visit our website:
http://omicsonline.org/Submitmanuscript.php

Artificial Intelligence



Shaozi Li

Professor, Dr.

Chair of Cognitive Science Department

School of Information Science and Engineering

Xiamen University, China

Tel: +86-592-2580080

Email: szlig@xmu.edu.cn

Research interests: Artificial Intelligence and Its Applications, Machine Learning, Computer Vision, Multimedia Information Retrieval, etc.

What is Intelligence???

❖Intelligence is the ability to learn about, to learn from, to understand about, and interact with one's environment.

❖Intelligence is the faculty of understanding

What Is Artificial Intelligence???

- **Artificial Intelligence (AI) is usually defined as the science of making computers do things that require intelligence when done by humans.**
- **A.I is the study of ideas that enable computers to be intelligent**

How Does AI Works??

Artificial intelligence works with the help of

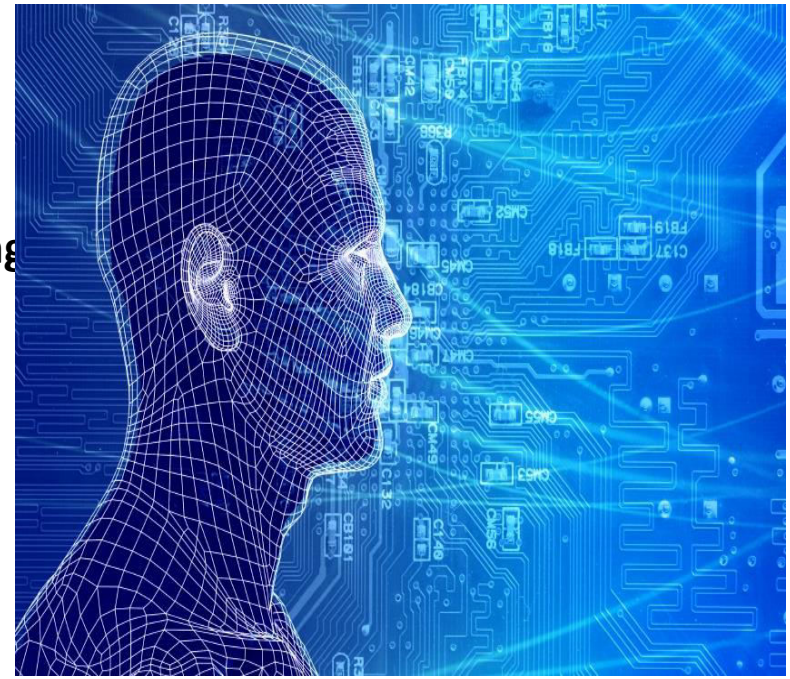
- **Artificial Neurons (Artificial Neural Network)**

And

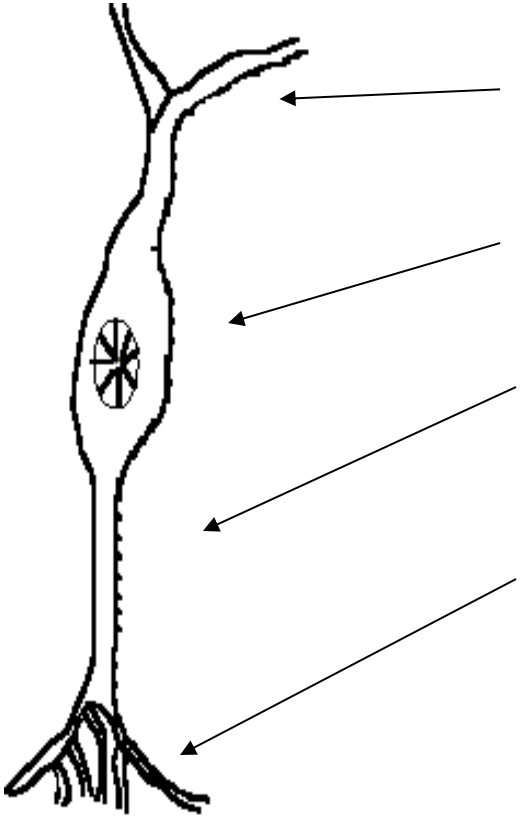
- **Scientific theorems(If-Then Statements, Logics)**

What is Neural Networking??

- Artificial neural networks are composed of interconnecting artificial neurons (programming constructs that mimic the properties of biological neurons).



Structure of a Biological Neuron

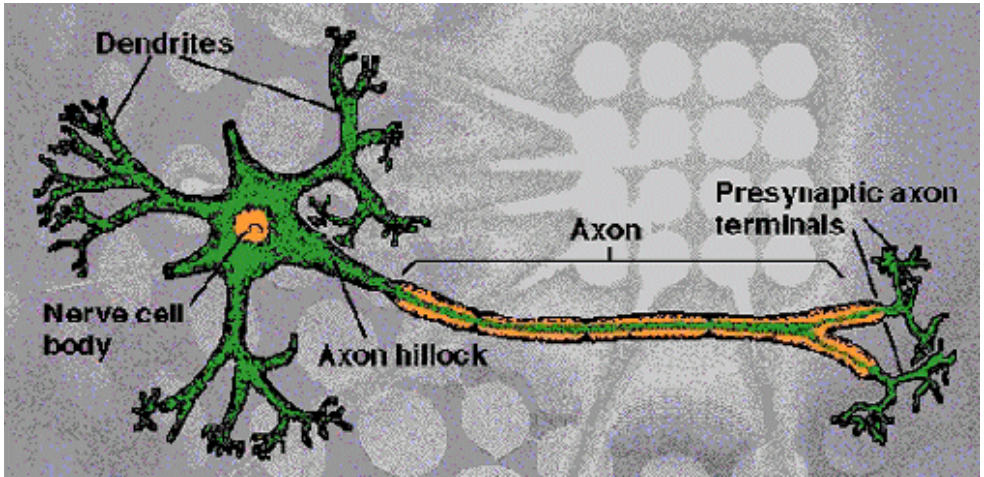


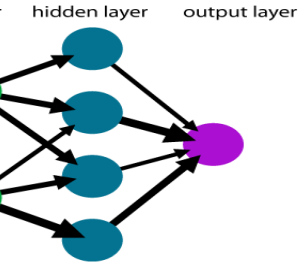
Dendrites: Accepts Inputs

Soma: Processes the Inputs

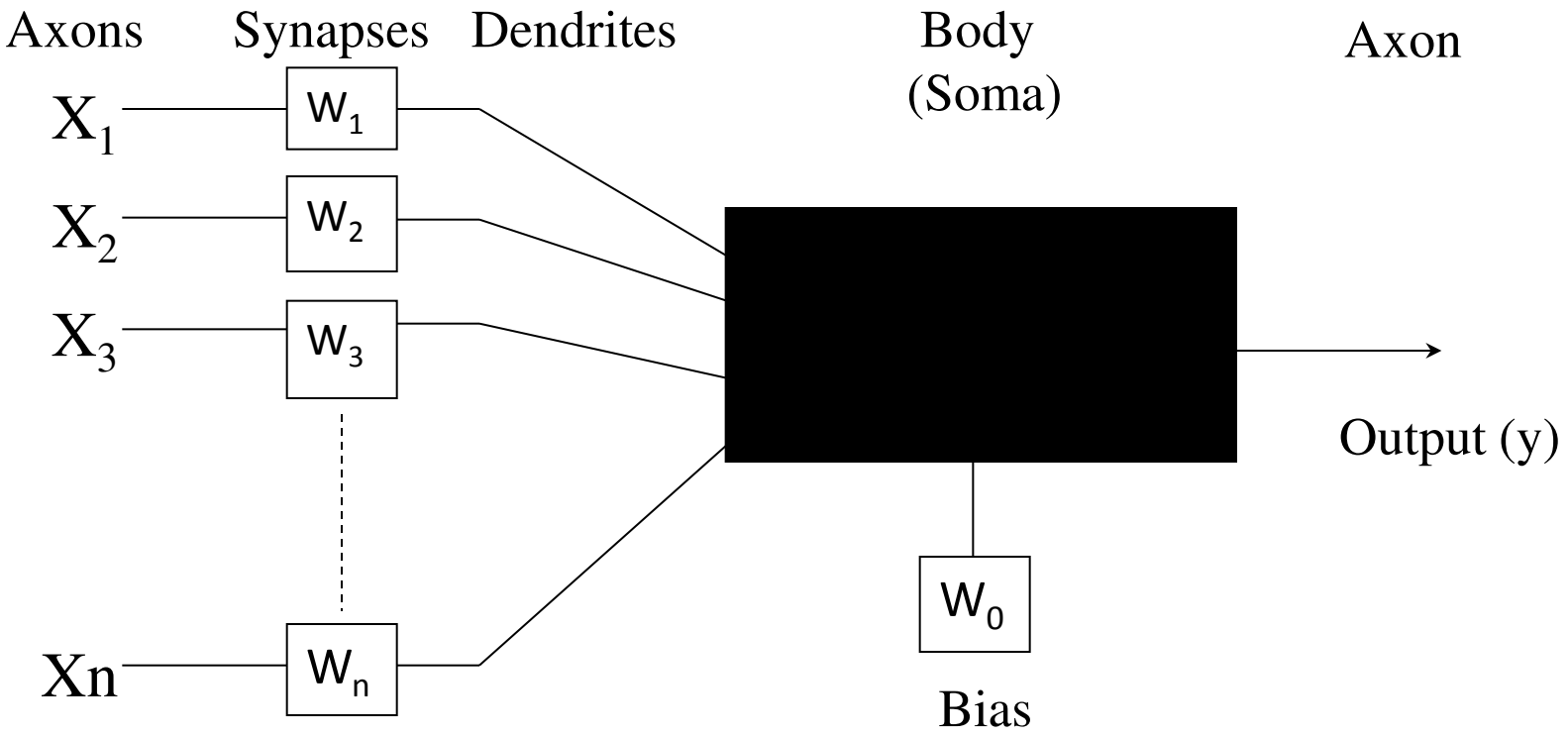
Axon: Turns the processed inputs into outputs

Synapses: The electrochemical contact between neurons





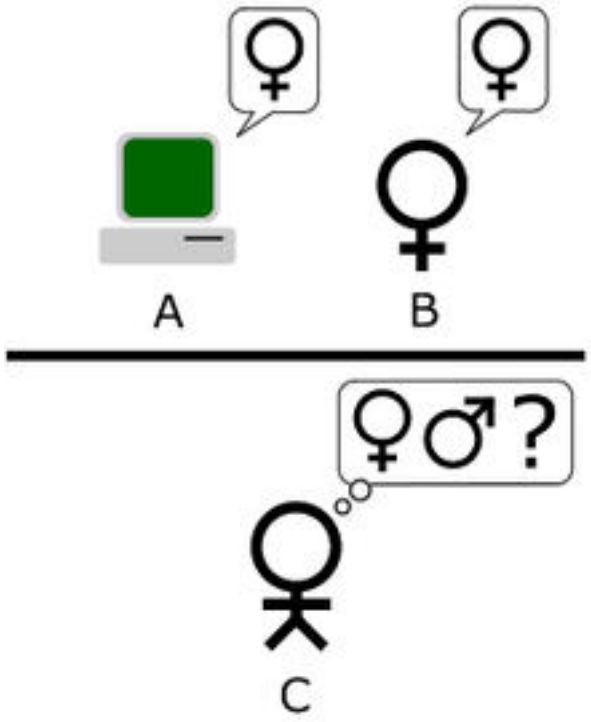
An Artificial Neuron



Turing Test

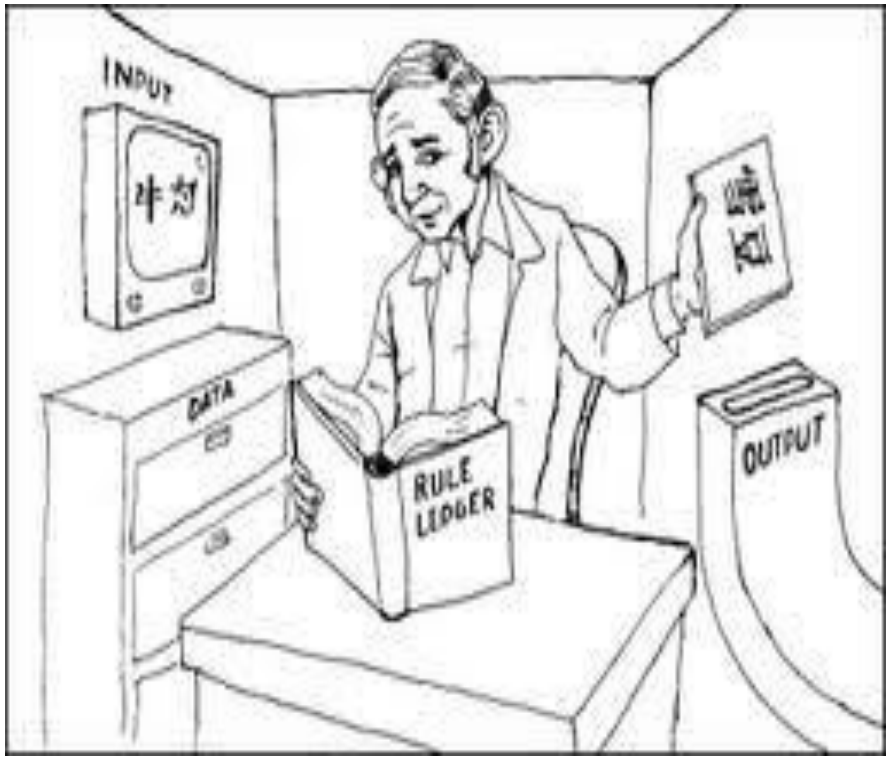
Imitation Game Test!!!!

❖The **Turing test** is a test of a machine's ability to demonstrate intelligence



Chinese Room Test

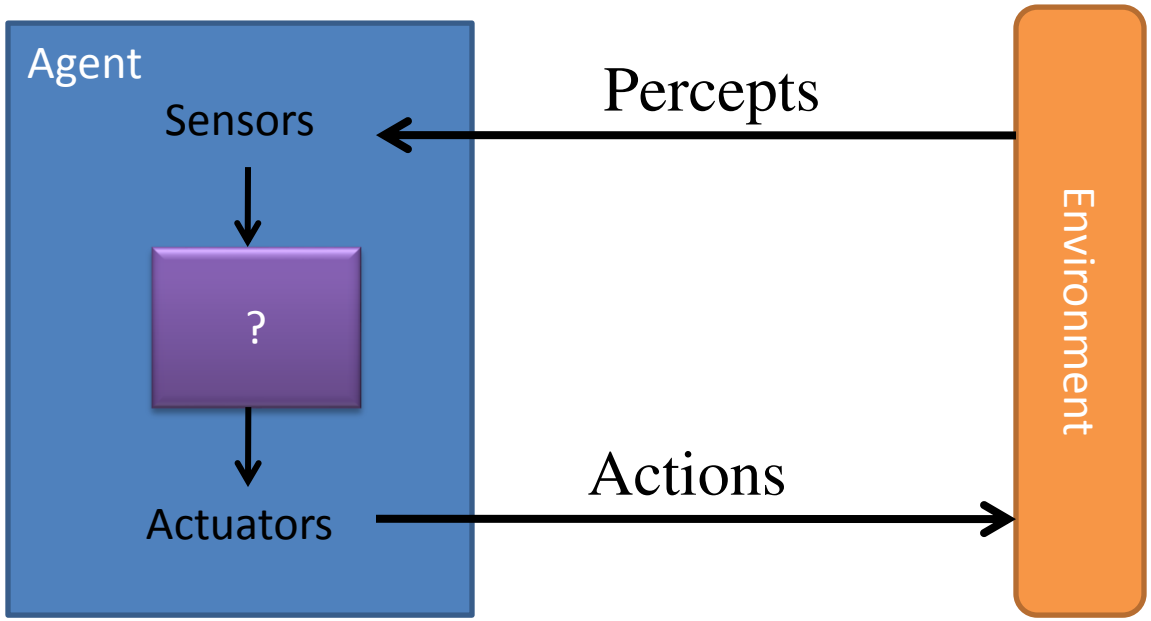
A Counter Argument to Turing Test



If you see this shape,
"什麼"
followed by this shape,
"帶來"
followed by this shape,
"快樂"

then produce this shape,
"爲天"
followed by this shape,
"下式".

Intelligent agents

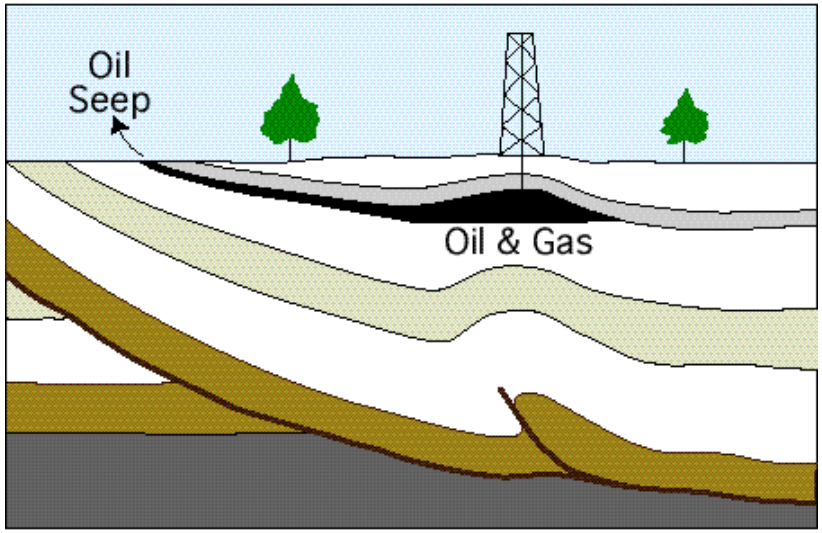


Examples Of Artificial Intelligence

Expert Systems!!

- An expert system is a computer program that is designed to hold the accumulated knowledge of one or more domain experts
- It reasons with knowledge of some specialist subject with a view to solving problems or giving advice
- They are tested by being placed in the same real world problem solving situation

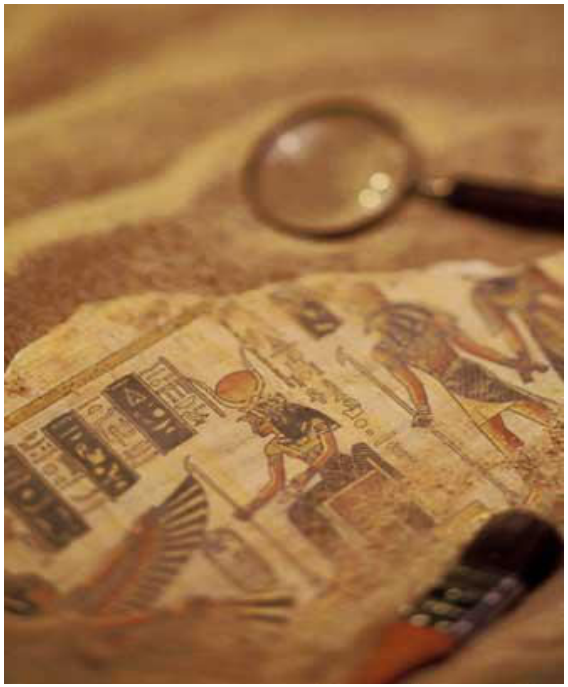
Applications of Expert Systems



PUFF:
Medical system
for diagnosis of respiratory conditions

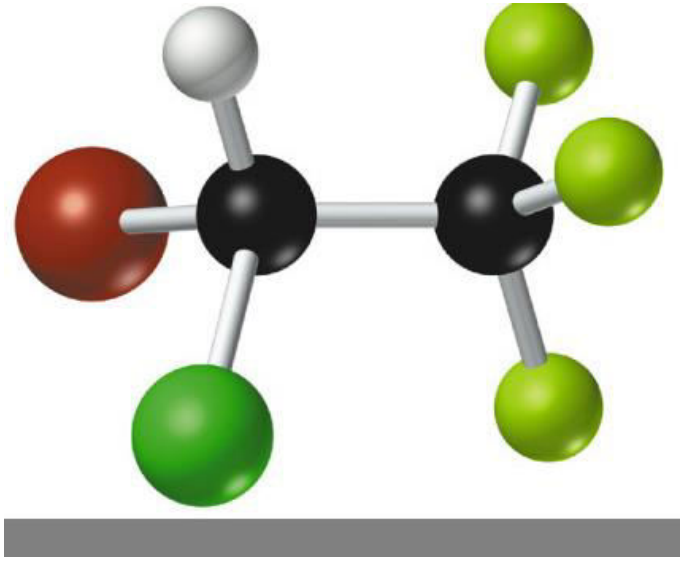
PROSPECTOR:
Used by geologists to identify sites for drilling or mining

Applications of Expert Systems



DENDRAL: Used to identify the structure of chemical compounds. First used in 1965

LITHIAN: Gives advice to archaeologists examining stone tools



Machine Learning!

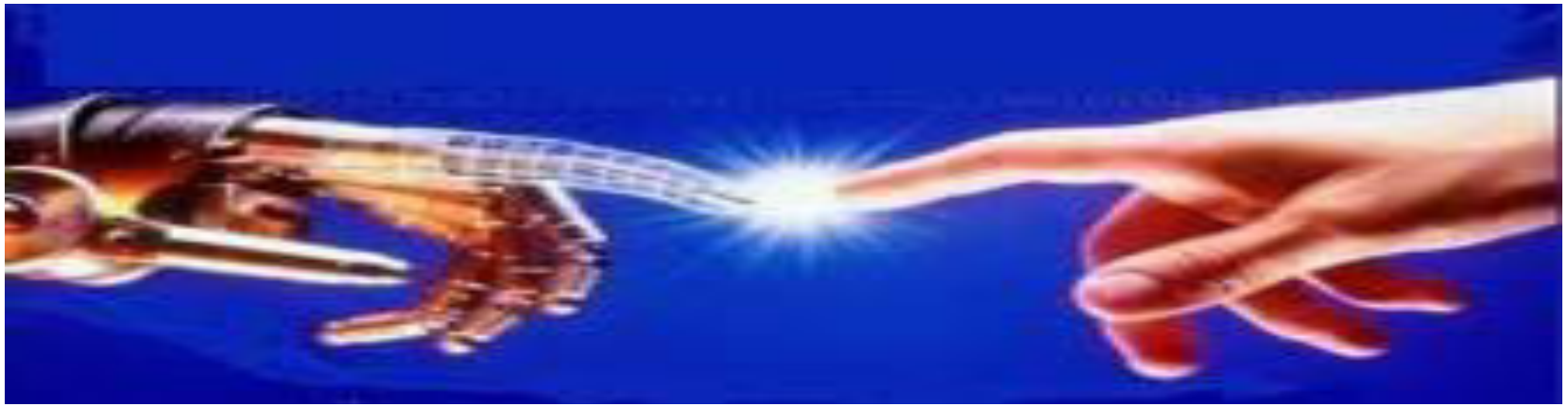
Machine learning is a scientific discipline concerned with the design and development of algorithms that allow machines to mimic human intelligence.

There are Three ways that A.I learns

- Failure Driven Learning
- Learning by being Told
- Learning by Exploration

Resemblance To Human Mind....

❖The special ability of artificial intelligence is to reach a solution based on facts rather than on a preset series of steps—***is what most closely resembles the thinking function of the human brain***



Human Intelligence VS Artificial Intelligence

Human Intelligence VS Artificial Intelligence

Pros

Human Intelligence

- Intuition, Common sense, Judgement, Creativity, Beliefs etc
- The ability to demonstrate their intelligence by communicating effectively
- Plausible Reasoning and Critical thinking

Artificial Intelligence

- Ability to simulate human behavior and cognitive processes
- Capture and preserve human expertise
- Fast Response. The ability to comprehend large amounts of data quickly.

Human Intelligence VS Artificial Intelligence

Cons

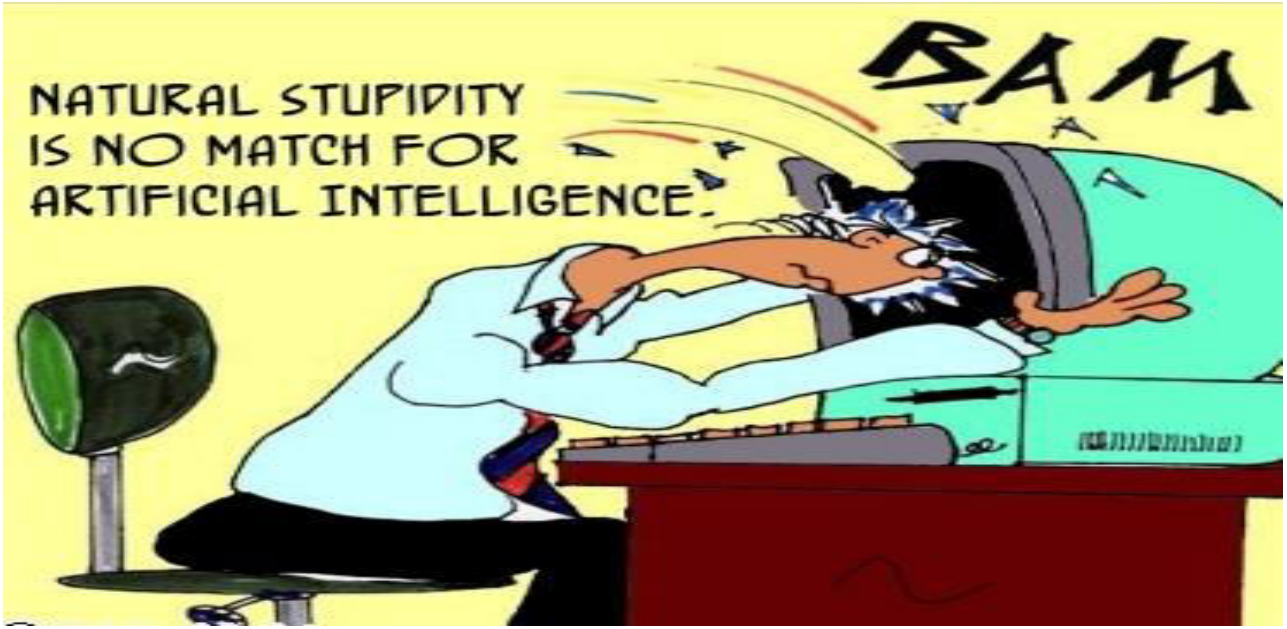
Human Intelligence

- Humans are fallible
- They have limited knowledge bases
- Information processing of serial nature proceed very slowly in the brain as compared to computers
- Humans are unable to retain large amounts of data in memory.

Artificial Intelligence

- No “common sense”
- Cannot readily deal with “mixed” knowledge
- May have high development costs
- Raise legal and ethical concerns

Human Intelligence VS Artificial Intelligence



We achieve more than we know. We know more than we understand. We understand more than we can explain (Claude Bernard, 19th C French scientific philosopher)

Artificial Intelligence VS Conventional Computing

Artificial Intelligence

- AI software uses the techniques of search and pattern matching
- Programmers design AI software to give the computer only the problem, not the steps necessary to solve it

Conventional Computing

- Conventional computer software follow a logical series of steps to reach a conclusion
- Computer programmers originally designed software that accomplished tasks by completing algorithms

Psychology And Artificial intelligence

The functionalist approach of AI views the mind as a representational system and psychology as the study of the various computational processes whereby mental representations are constructed, organized, and interpreted.
(Margaret Boden's essays written between 1982 and 1988)

Artificial intelligence & Our society

Why we need AI??

❖To supplement natural intelligence for e.g we are building intelligence in an object so that it can do what we want it to do, as for example-- robots, thus reducing human labour and reducing human mistakes

•My Perspective

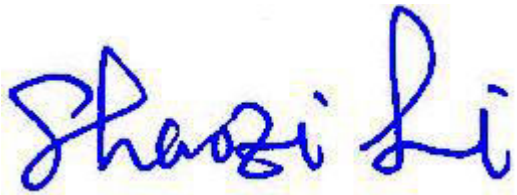
For Humans Intelligence is no more than TAKING a right decision at right time

And

For Machines Artificial Intelligence is no more than CHOOSING a right decision at right time

I think Artificial intelligence is the Second intelligence ever to exist

Shaozi Li



International Journal of Swarm Intelligence and Evolutionary Computation

International Journal of Swarm Intelligence and Evolutionary Computation

International Journal of Swarm Intelligence and Evolutionary Computation

- A Global Colloquium on Artificial Intelligence

OMICS Group Open Access Membership

OMICS publishing Group Open Access Membership enables academic and research institutions, funders and corporations to actively encourage open access in scholarly communication and the dissemination of research published by their authors.

For more details and benefits, click on the link below:

http://omicsonline.org/membership.php