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# An Introduction to Expert System and Artificial Intelligence

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**ABSTRACT:** Right and accurate definition of Artificial Intelligence is tough enough, as it is deals with many aspect-intelligence, knowledge, reasoning, thought, cognition, learning and a number of computer related term. In simplify manner we can say that when a machine understand or act as a man, that time the system is called as artificial intelligence. Expert System (ES) is a field closely related with Artificial Intelligence (AI). It is also consider as branch and advance area of Electronics. As we know Information Science mainly deals with information activities, so that in several areas AI and ES application is possible. Here in this paper we describe aspect of AI and EI emphasizing its contemporary use and we also include the area of Information Science (IS) where soft computing i.e. IS and ES application is possible.

**KEYWORDS:** Expert system, artificial intelligence, contemporary issue, AI, ES, Information Science, Information Science & Technology (IST), Information and Documentation Centre.

### I. OBJECTIVE

Some of the objective for which we conduct this research like: To know basic about artificial intelligence and expert system, To know evolution of artificial intelligence and expert system, To know about information science and its sub-division, To know the basic area where AI and ES can be use in information science and its working area, To learn why artificial intelligence and expert system should include in the syllabuses of information science and its related knowledge domain.

### II. METHODOLOGY

To conduct this research work, we first of all handle literature related to artificial intelligence and expert system. We analyze book, article, and recent news in this field. To analysis its potential uses we, handle the academic field information science that is information activities. To analyze the need of expert system and artificial intelligence we also handle information science curricula of Indian universities. We also discuss institutional recourses and expertise in this field.

### III. INTRODUCTION

Artificial intelligence is a branch of computer science concerned with the study and creation of computer system that exhibit some form of intelligence, system that learn new concept and task, system that can understand a natural perceive and comprehend a visual scene and system that perform other types of facts that require human types of field that require human types of intelligence [07]other hand expert system is a set of programmes that manipulate embedded knowledge to solve problem in a specialized domain that normally requires human expertise. An expert system is actually nothing but the application or some intelligence within the computational intelligence. Artificial intelligence and expert system both have close relation with mechanical engineering. We can use application of both technologies in various information activities and in the academic field of information science. Before going to discuss about its evolution and contemporary uses let clear some meaning:-



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## A. Information Science

Information Science is an interdisciplinary field which is today consider as important knowledge domain. Information science mistakenly consider as computer science, however information science we cant consider as other field than computing. It is an interdisciplinary knowledge cluster has close relation with computer science, management science, librarianship, psychology which is deal with information, data, knowledge and related facet. Information science has integration with mathematics and statistics, so that today it is consider as important area of computer science.

## B. Information Centre

Information Centre is an information institution which is dedicated to collect, select, organize, manage and disseminate information, depending upon users needs.

## C. Information

Information as a concept has a diversity of meanings, from everyday usage to technical settings. Generally speaking, the concept of information is closely related to notions of constraint, communication, control, data, form, instruction, knowledge, meaning, mental stimulus, pattern, perception, and representation.

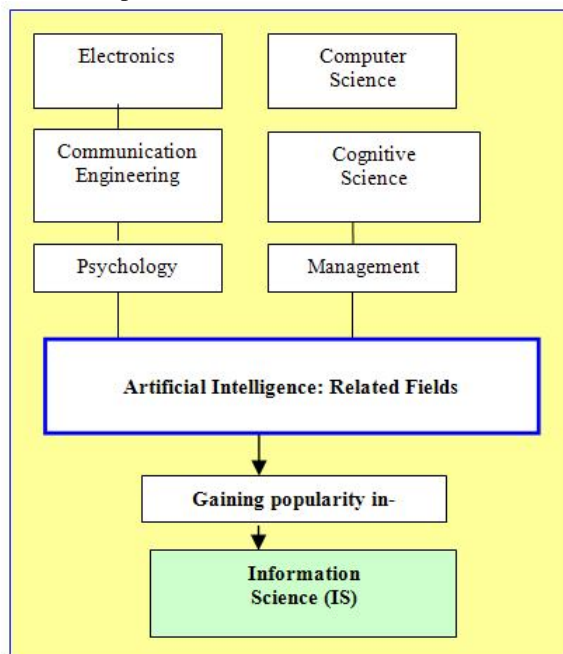


Fig. 1

## D. Information and Allied Area

Apart from Information Studies the related area of Information is- Information Science & Technology, Computer Science, ICT, IT and so on.

## IV. ARTIFICIAL INTELLIGENCE: OVERVIEW

The grounding of artificial intelligence was started in the area of modern computing i.e. 1940 to 1950. The



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main aspect of Artificial Intelligence is ability to strong large amount of information and processes it at very high speeds and with some human activities. AI many a times works as like human. During some decade we examine how AI and ES based machine develop in wide area of system and development. The intelligence basically draw a useful conclusion about the world around us, system that can understand a natural language perceive and comprehend a visual scene and system that perform other type of fact require human type or intelligence.

## V. DURING PAST FIVE DECADE

During this last five decade artificial intelligence and expert system come to today's shape during 1961 to 1965 AL Samuel developed a program which learned to play check ers at a master level. Some of the event of expert system developed in this phase.

## VI. ARTIFICIAL INTELLIGENCEAND EXPERT SYSTEM DEVELOPED: BEFORE 1950

The development and innovation in the field of Artificial intelligence first start in the decade of 1940' s, however officially AI consider in mid 1950's when international business Machine (IBM) organized a seminar cum workshop at Dartmouth College. Between 1920and 30's such logician helps to develop AI, they were carrying on earlier work in logic.

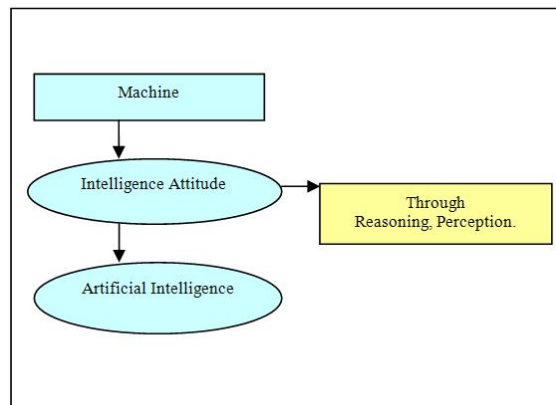


Fig. 2



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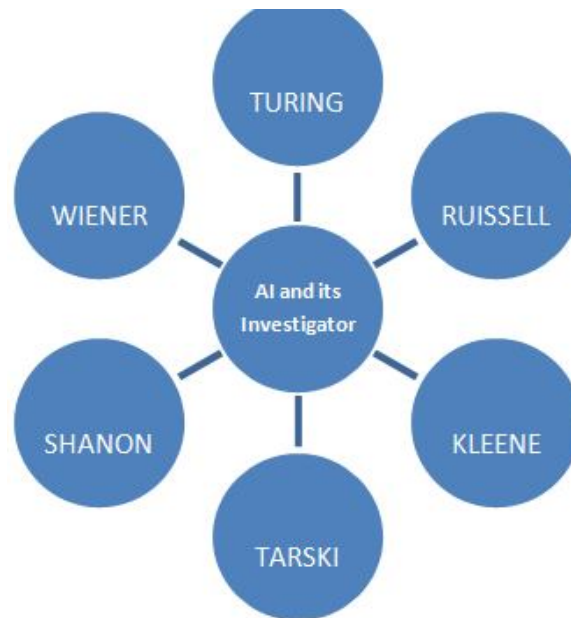


Fig. 3

## VII. AI AND ES DEVELOPMENT: POST 1950'S

During 1950 and after that most of the work in the field of artificial intelligence and expert system were carried out like chess playing program, automobile theorem proving and so on. During this period expert system first emerged from this research laboratories of a few leading US universities during the 1960's and 1970's. Here first use of knowledge rather than algorithm and general search method was given importance.

## VIII. AI AND ES: CONTEMPORARY APPLICATION

AI and ES both have important role in the field of Science, Technology, Society. Some traditional and contemporary applications are as follows:-

- Helps in decision making and planning.
- Recently using in management information system in not only in private concern but also in government houses and department.
- Helps to develop automobile car, aero plane, and helicopter.
- It is using in underwater railway transportation, recently.
- To control unexpected winter and hot in the commercial building, hopping mall, residential complexes for complete air conditioning.
- Copier, printer, computer intelligent, mobile phone, E-mail service are now Expert System enable.
- Different types of Medical diagnosis are possible through AI and ES.
- Diagnosis of Complex electronic and electromechanical system is possible.
- Numerous application areas are there in space discovery.
- E-commerce E-Business are the latest user of AI and ES.



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- To teach special task Expert System enable web based system now –a-days widely using across globe.
- Reply AI and ES are using in the locomotion systems, complex electronic and so on.

## IX. INFORMATION SCIENCE AND ITS RELATIONSHIP WITH AI AND ES

Before going to discuss about application of Artificial Intelligence in Information Science let us know clearly about information science. Information science many a time consider as alternative name of computer science and IT and some times as library Science. Actually information Science is a subject which is discipline of disciplines. Many subjects have contribution for making information science.

Practically information science is a field which is closely connected with the subject information and practice of informatics. Some of the area where AI and ES application is possible like-

- As we know that, information means information collection, selection and organization and dissemination of information. So in each case AI and ES application is possible like through data mining and warehousing tool. Here business tools help to organize and retrieve information as per time, and availability is also possible within a short period.



Fig. 4

- In classification AI and ES use of classification is possible. Classification is a system or mechanism or we can say concept. Classification is classification of document according to subject or discipline or nature, so here human efforts are needed to identity the actual subject but in many simple subject AI based computer can directly give classification number, as per pre loaded classification scheme or schedule like-

## X. CONCLUSION

The value of expert system and decision system or service was well established by the early 1980. A number of successful applications completed then and these innovations provided cost effective services. AI & ES and its user are increasing day by day due to its wide benefit. As far as information science is concerned I and ES both have great potentiality. However



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many information and IT foundations are still avoiding AI and ES as a electronic tool for efficient data and information delivery mechanism. Some of the benefits are possible through AI and ES in information science area like easy and efficient information and data collection, selection and organization, saving future budget on information product, save time in information and data delivery, to keep information hub and similar foundation functional and active, to fulfill aim and objective of information science and information service.

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