

Analyses Development of Intelligent System in Different Application Area and Education

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Abstract

In the future, intelligent machines will replace or enhance human capabilities in many areas. Artificial Intelligence and intelligent system is widely used these days to solve the complex problems in various areas as science, engineering, business, medicine, weather forecasting. This paper gives an overview of this technology and the application areas of this technology. It examine various common application of AI used in different fields. This paper will also explore the current use and future scope of Intelligence system in the education.

Keywords: Fuzzy Logic, Artificial Intelligence, AI

I. INTRODUCTION

Artificial intelligent is the study of the system which show intelligent behaviour, learn, demonstrate, explain and advice its users. It is a way of making a computer, a computer-controlled robot, or a software think intelligently, in the similar manner the intelligent humans think. Major areas of intelligent system are Expert systems, Neural Networks, Robotics, Fuzzy Logic and Natural Language Processing. Artificial intelligence has the advantages over the natural intelligence as it is more permanent, consistent, less expensive, has the ease of duplication and dissemination, can be documented .this paper is not intended to comprehensive survey of all area that have employed AI tools and techniques. Rather it indicates where AI has already major impact and where future research is needed to overcome current limitations. It focuses on common applications of intelligent system in different area and significance role of intelligent system in education sector and possible investigation in education using different AI techniques.

II. SOME COMMON APPLICATIONS OF AI IN DIFFERENT FIELDS

AI researchers have created many tools to solve the most difficult problems in computer science. Many of their inventions have been adopted by mainstream computer science and are no longer considered a part of AI. Artificial intelligence has been used in a wide range of fields including medical diagnosis, stock trading, robot control, law, remote sensing, scientific discovery and toys.[6]

A. Application of Artificial Intelligent Technique in Agricultural:

Monitoring crop conditions like water stress, nutrient condition, plant population, soil moisture content etc.

B. Application of Artificial Intelligent Technique in Biology and Biomedical Problems:

Epidemiological Data inference (e.g. tracking epidemics, finding patterns of exposure/symptoms), Experts Systems for advising health-care professionals, Brain-Computer Interface and Neuroprosthetics, Biomedical Image Analysis(Segmentation, Tracking).

C. Application of Artificial Intelligent Technique in AI in Military:

Military robots are autonomous robots or remote-controlled mobile robots designed for military applications, from transport to search & rescue and attack.

D. Application of Artificial Intelligent Technique in AI in Transportation:

Different modes of transport and their interactions, intelligent and real-time traffic management and control; design, operation, time-tabling and management of logistics systems and freight transport; transport policy, planning, design and management; environmental issues, road pricing, security and safety.

E. Application of Artificial Intelligent Technique in AI in Toys and Games:

Computer games that have used artificial intelligence in innovative ways to critical acclaim, and some of them that have managed to integrate cutting-edge AI technology, the popular applications of AI games are #5Creatures, 30Second Pitch, #8Total War, #10 Sim City etc.

III. SIGNIFICANCE OF INTELLIGENT SYSTEM IN EDUCATION

One place where artificial intelligence is poised to make big changes (and in some cases already is) is in education. While we may not see humanoid robots acting as teachers within the next decade, there are many projects already in the works that use computer intelligence to help students and teachers get more out of the educational experience.

Artificial intelligence can automate basic activities in education, like grading. Educational software can be adapted to student needs. It can point out places where courses need to improve. AI-driven programs also available which is useful for students and evaluators for feedback.

Now a day's students take advice of counsellor for career guidance but as no. of counsellors is less and it is also not affordable for rural area students so, the use of an expert system for career selection is the best option. Choosing a career is the important decision for students in determining future plans. So the various applications of AI helpful in career selection which provides career selection guidance to decide their career paths, for testing their skills, intelligence, interests etc. Even with the help of fuzzy expert system we can evaluate for teachers' performance on the basis of various key performance attributes. For evaluation many factors are easily used like: Proficiency in teaching, Personal interest in teaching, Presentation & communication skills, Speaking style & body language and Content language. To calculate the decision score of main attribute we can use any formula like:

$$C_i = \sum_{n=1}^m P_n W_n$$

Where, C_i =main attribute. M =number of sub-factor.

P_n =Fuzzy value of n th input parameter,

W_n =Expert weight of the relative input parameter.

Modelling is a central concept in AI in education and increasingly rich models are being developed. Such models take into account characteristics of learners and teachers, collaborative, social, affective and meta-cognitive aspects of learning, the settings learning takes place in, and the learner's context. Baker (2000) identified three main roles for models provided by intelligent system in education [4].

Model as scientific tool. A model is used as a means for understanding or predicting some aspect of an educational situation. Model as component. A computational model is used as a system component enabling a learning environment to respond adaptively to user or other input. Model as basis for design. A model of an educational process, with its attendant theory, guides the design of technology-enhanced learning. Open Models as prompts for learner and/or teacher reflection and action.

Some of examples of intelligent system already running in education area are:

- 1) Expert Systems Advances in Education 2010
- 2) Expert System: A Catalyst in Educational 2011
- 3) Intelligent Systems for Students Learning 2011
- 4) Educational Advisor System 2012
- 5) Expert Systems for Mobile intelligent tutor 2012
- 6) An Iterative Expert System for Track and Field Teaching 2013
- 7) Expert System for Higher Education 2014
- 8) Developing Web-Based Semantic Expert Systems 2014[1][2]

Future intelligent teaching and learning environments may be self-learning, using machine-learning techniques to learn about students and improve their own performance by evaluating how they are used and associated with learning outcomes. However, such environments will not aim to replace teachers but rather work with teachers both being informed by teachers' input and informing teachers' decisions and actions. These environments will take into account the needs and interests of learners and will employ novel interfaces and techniques from games to deliver highly engaging and accessible learning experiences. Next generation learning environments will augment the real world with interactive representations that support learning through interaction with tangible physical world and mixed reality interfaces while making perceptible, phenomena that are too large, too small, too quick and too slow to observe in the real environment

IV. CONCLUSION

Tremendous contribution to the various areas has been made by the Artificial Intelligence techniques from the last 2 decades. Artificial Intelligence will continue to play an increasingly important role in the various fields. This paper is based on the concept of artificial intelligence, areas of artificial intelligence and the artificial intelligence techniques used in the field of education. Advances made within the central AI research areas, such as knowledge representation, natural language understanding, reasoning inferencing, and learning/discovery, will undoubtedly continue to be reflected within the educational field, particularly in instructional and diagnostic systems.

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