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Enhancing the Learning progress by using K-Mapping Mechanism in Artificial Intelligence

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***Abstract*:** In the present computing era, the field of "Artificial Intelligence" play an important role in each and every sector. The major objective is to create a machine with intelligence in different level is a great challenge for researchers. Finding the solution for this issue and resultant effect is achieved in the direction of learning aspect. The most important element correlated with an "Artificial Intelligence Learning Entity" (AILE) is everlastingly entitled using a terminology "Learning Agent". Every phases of an implementation in the learning agent applies cognitive theory in order to store as well as the knowledge representations. In this research work focus on enhancing, the learning progress or mechanism which will determine the level of intelligence in "Learning Agent". It takes a problem statement for "Enhancing the Learning progress by using K-Mapping Mechanism in Artificial Intelligence". The variable "K-means" various components that are linked with improve learning mechanism.

***Keywords*-** Learning, Agent, intelligence and cognitive.

I. INTRODUCTION

The intension of AI researchers is creating an intelligent entity in order to replace human intervention to do the work progress at any level. In this resultant aspect, two components are used determine the success: first one is called as "Knowledge" and the second one is called as "Intelligence". In general, all of us agreed one thing; these entities are linked with learning progress or continue in learning mechanism. Most of the occasions, the decision making progress of above mentioned components are driven by the learning process only. If, it will be a good one, then the resultant values accuracy is also good one. Otherwise, it never to be gets an intelligent performance for particular entity. The learning progress for an artificial intelligence entity gets inputs from: Supervised Learning (SL) as well as the Unsupervised Learning (USL). The working elements binding with learning progress is crystal clear depiction for the following Figure 1.

The supervised learning (SL) mechanism in AI is always utilizing a set of pre defined training data set in order to predicate the resultant effects. Simply saying that, the interactions of implemented entity with an environment is based on previous experience. The unsupervised learning (USL) is just an opposite for previous representations. The resultant values are never to be predicated by anyone.

For example, the entity face a problem and in the situation to find a solution of any problem, then the control begins its trace from previous knowledge store representation is the first category.

Just a contradiction for later one is getting an input from run time. Based on these input representation parameters, the learning mechanism is classified in to: Inactive and in active learning.

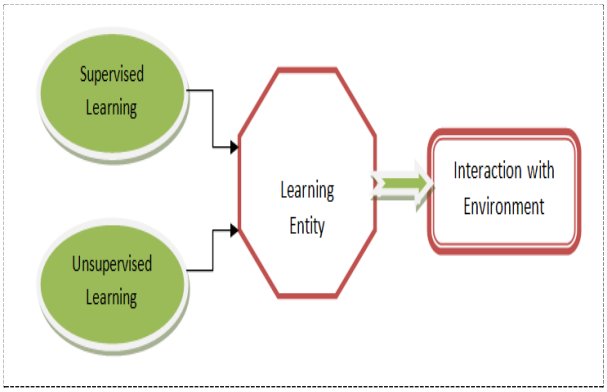

Figure 1 Learning progress for an intelligent entity

The quality of learning is considered from existing knowledge and training set available from the knowledge storage for a particular domain. The "Artificial Intelligence" terminology is always using a phrase "Agent" in order to express "Intelligent entity" in terms quality of learning with suitable environment [1].

Always to store any data by using all the necessary information's along with the representation module for agents. The terminology for "Agent" or "Entity" is commercially called as "Robots" in the industry.
In this research work focus on "K-Mapping" is explicitly specifies; linked components in the enhancement of learning progress by an intelligent agent.

The components are: Learning inputs, Learning types and the domain for particular environment. The following Figure 2 depicts the K-mapping elements that are involving in the learning progress enhancement.

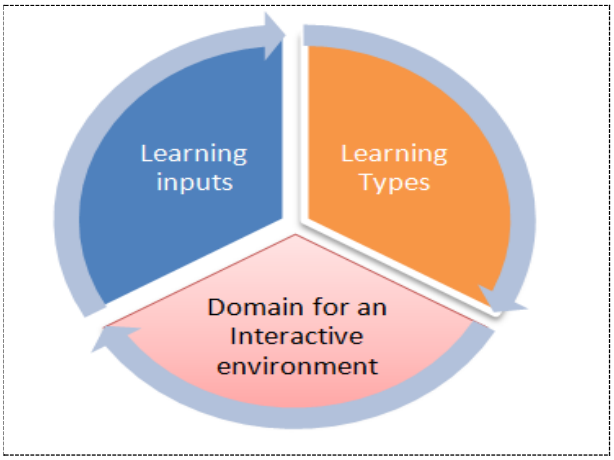

Figure 2 K-mapping components for an intelligent entity

Further studies are shows that; the learning tasks includes its classifications, when the examples are not already classified (unsupervised learning), learning what to do based on rewards and punishments (reinforcement learning), learning to reason faster (analytic learning), and learning richer representations such as logic programs (inductive logic programming) or Bayesian networks [2].

II. RELATED WORK

In well known phrase for the terminology "Learning" is always improving performance of an entity in the particular domain. Before start the progress, to determine which domain going to be involve in the resultant performance. Based on it, the trained (supervised) and untrained (unsupervised) data sets are gathered in connection for domain.

There are many numbers of work has to be done related with learning progress by the researchers. Among these, most of the research work focuses variety of input parameters without a particular consistent frame work. Some of the related works are summarized in the following paragraphs.

While the intelligent entity getting an input from known source (the inputs from well trained data sets), then the selection control immediately to interact with an environment by using prior knowledge store.

Suppose, it may facing a situation from unknown source (the inputs from an untrained data sets), the control get strike with a knowledge representation for relevant domain. In this occasion, give an opportunity to enhance the learning progress [3].

The interactive environments are influenced with the resultant performance of an intelligent entity at the time of providing insufficient resources. In these critical environmental issues, are creates a scenario for inadequate data set.

These types of environments are handling by the intelligent entity with the help of learning module called as "Reasoning" [4]. For example, consider a series of data sets; 2, 4, 6, __, 10, 12. In this specification the missing value ("__") is identified by using previous knowledge store as "8".

At this moment, there is a necessity for an involvement of cognitive principle in order to fulfil the insufficient untrained data sets.

Using the domain knowledge existing in the knowledge storage representations are considered to fill the gap in learning progress. Then, the resultant findings are considered in future references for accomplish the task. This is called as "Enhancement" [5].

The diagram (Figure 3) illustrates, the learning progress get an input values from 3-domensional working environmental issues.

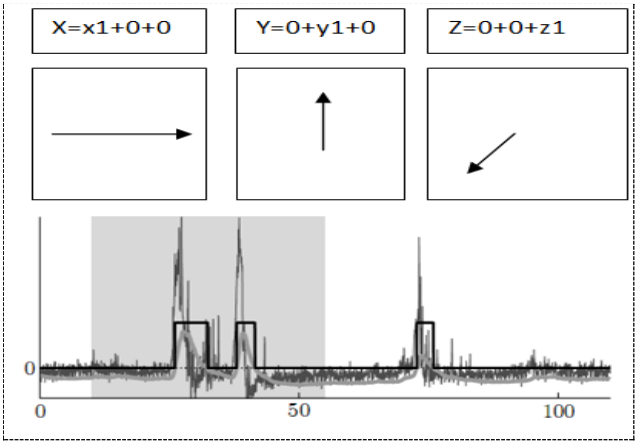

Figure 3 Inputs from 3 dimensional environments for learning progress

The searching cursors movements are in only one at a time such as the co-ordinate values remains set to "0". The data analysis by using an MATLAB resultant graph is affixed here with training data set intervals "50". The peak (saturated) values in the output represents, getting inputs from trained known sources and ground level dispersions are displays untrained data set from unknown sources [5].

III. PROPOSED WORK

The proposed architectural representation of "Enhancing learning progress by using "K-Mapping Mechanism" in Artificial Intelligence includes following components:

i. Sensory unit act as an input source
ii. The Motor system act as output exhibiter with an environment
iii. Knowledge box

iv. Language Representation
v. Planning system

The Sensory unit receive inputs from various sources such as known and unknown data sets. The acquired information's getting through sensory input unit will be processed by various phases (mentioned above numbered list from iii to v). Then, the resultant behaviours in the interacting environment or responses are exhibits with the help of Motor system. The following block diagram clearly explains each and every component in a crystal clear by using Figure 4.

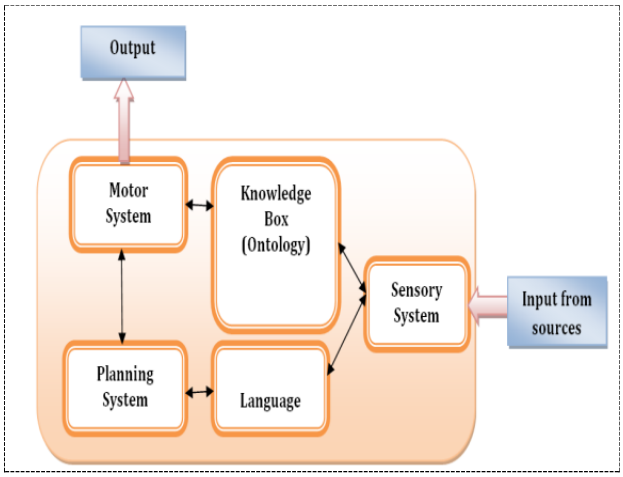

Figure 4 Components in proposed architecture for K-Mapping mechanism

The "Knowledge Box" in proposed architecture plays a vital role to enhancing learning progress with the help of a working principle for classifications.

Before to design the intelligent entity is linked with particular domain, the relevant information's should derive from external sources. These input providing external sources are categorized like in the above said principles for SL and USL.

In this research work, to acquire the data set for medical domain in order to carry the data analysis. For example, to collect diabetics infected patients for certain intervals with known reasons as well as unknown reasons.

Then the next phase is language selection for knowledge representation in the implementation for User Interface (UI). Most probably, every researcher exposes the willingness to prefer English language. The module for planning system is working in the principle of establishing a communication link between knowledge representation and the motor system. The following Figure 5represents work flow of planning system module in the proposed architecture.

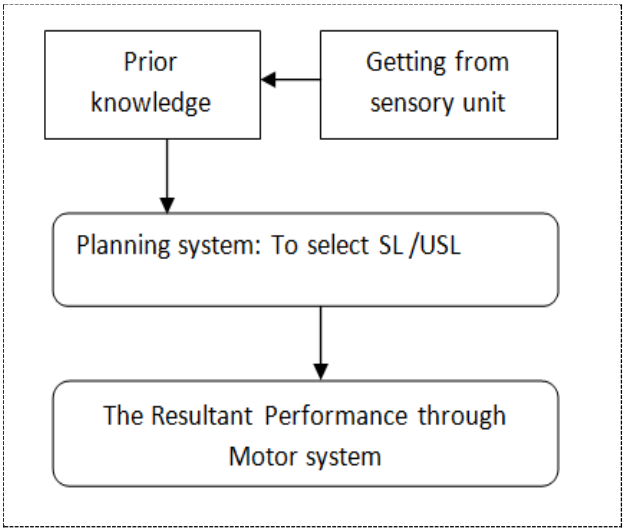

Figure 5 work flow of planning system

The trained as well as untrained data set are analysed through the data modeller is listed in the following table.

Table 1 Data Analysis using medical domain for diabetics infected patients

Types of Training inputs	Assessment parameters		
	% of representation in knowledge box	% of Language selection for representations	% of efficiency in Planning
Known Source	67.08	73.01	89.03
Unknown Source	34.78	39.41	43.03

The above table (Table 1) shows the data sets are acquired from known and unknown sources with the level of intelligent determinant factors knowledge representation in knowledge box, language selection and planning efficiency.

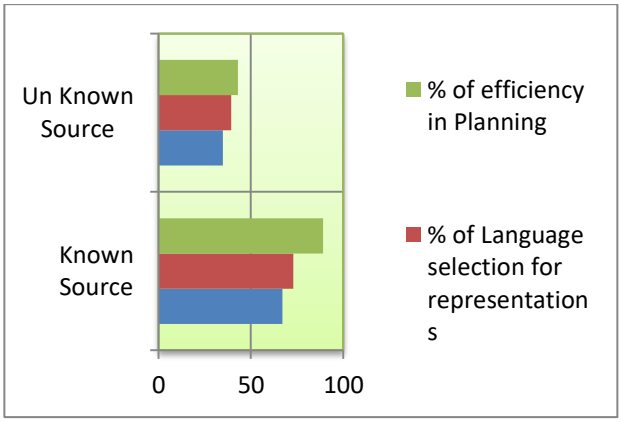

Figure 6 Level of Learning progress

From the figure 6, X-axis values are represents data analysis interval and the Y-axis describes sources to get an inputs. The graphical values as well as tabular values are bring a conclusion for the proposed architecture is working efficiently in the trained data sets from known sources.

IV. CONCLUSION

The enhancement of learning progress by using K-Mapping Mechanism in Artificial Intelligence is implemented with an objective for improving level of intelligence in Intelligent Entity (IE). The experimental results are shown trained data sets play an important role in the direction of improves intelligence level. In this research work is limited with number of numerical data sets from trained sources. In future work, it may extend with the help of visualised inputs and compare with level of efficiency.

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