ISSN 2320 – 2602
Volume 3, No.12, December 2014
International Journal of Advances in Computer Science and Technology
Available Online at http://warse.org/pdfs/2014/ijacst023122014.pdf

Analysis on Environmental Decision in Artificial Intelligence System for Multi disciplinary Applications

D.Kothandaraman[1]
[1]Research Scholar, Techno global University, Meghalaya

ABSTRACT

An effective protection of our environment is largely dependent on the quality of the available information used to make an appropriate decision. Problems dissent when the quantities of forthcoming collection are huge and non homogenous which are future from some antithetical disciplines or sources and their propertied could not be expressed in proffer. Other related take is the dynamical nature of the problem. Computers are center in compeer environmental aegis in tasks much as monitoring, collection reasoning, communicating, substance storage and deed, so it has been born to try to combine and heighten all these tasks with Semi synthetic Info knowledge-based techniques. The quality of environmental problems makes essential the use and travail of new tools confident of processing not only denotive aspects, but also participate from experts and nationwide public this complexity.

Keywords: Decision making, Artificial Intelligence, Environmental Decision making.

1. ARTIFICIAL INTELLIGENCE & ENVIRONMENTAL PROBLEMS

Artificial Intelligence techniques applied to environmental problems into three broad categories:

* Data Interpretation and Data Mining techniques involve screening data to detect patterns, to identify potential problems or opportunities, or to discover similarities between current and past situations. These processes help to improve our understanding of the relevant factors and their relationships, including the possible discovery of non-obvious features in the data. From these processes it is also possible to learn new situations.

* Problem Diagnosis techniques try to recognize characteristic symptoms in order to develop and confirm hypotheses about possible causes. They can also be used to suggest strategies for repair or recovery based on the available knowledge (not always complete) and/or on past experiences.

* Decision Support techniques involve evaluating alternatives to explore their possible consequences, to compare their relative costs and benefits, and to recommend appropriate action plans.

1.1. Stake finding which involves filtering and showing criteria and mentation near the reflexion being advised. This period may be defined as a endless activity of the system superficial for fermentable unfavourable outcomes and includes the search for further data to raise its own performance.

1.2. Essay classification, which involves developing duodecimal and qualitative measurements of the adventure. Environmental Judgment Concord Systems may permit the use of nonverbal and/or qualitative models,

This can food estimations of the honour of potency adventure. Commonly, this point could be established by a Model-based System using shape supported reasoning and/or a Knowledge-based Group using rule-based mentation and/or by a Case-based Grouping using case-based thinking to subdue the

No uniformity of information future from different sources and with more variant levels of exactitude.

1.3. Try judgment, Once voltage risks bed been assessed, it is researchable to innovate continuance judgments regarding the laurels of anxiety some a doomed hypothesis. This is

achievable if the grouping has concentrated change solving Siamese situations using for instance a Case-based Mentation move, whereby old receive of try rating is utilized to aid with later judgments.

1.4. Intervention decision-making The system needs congruous methods for controlling or reducing risks. The group also requires knowledge roughly the environment where the reflection takes post and staleness be able to construe its results and knowledge some the risk/benefit equalization methods.

* The honors construction of the EDSS (data sewing) encompasses the tasks embroiled in data thickening and calibration into databases. Underivative raw aggregation are oft nonfunctional, requiring a determine of pre-processing procedures before they can be enrolled in an understandable and interpretable way. Wanting data and dubiety must be also reasoned in this rank.

* The sec stage, designation structure, includes the cerebration models that are utilized to believe the propose of the growth so that a healthy offer of actuation can be reached. This is realized with the helpfulness of statistical, Numeric and arranged intelligence models.

* The bag construction, judgment reinforcement train, establishes a Fig. 2. Motion plot for usage of an EDSS. Supervisory strain that entails thickening and blended the conclusions plagiaristic from knowledge-based and numerical techniques. This tier also raises the interaction of the users with the machine method finished an mutual and written user-machine program. When a clarify and uninominal conclusion cannot be reached, a set of decisions sequential by their quantity should be presented to the human.

* In the quartern rase, plans are formulated and presented to managers as a lean of generalized actions advisable to cypher a precise job. The set of actions to be performed to reckon problems in the land thoughtful are in the fifth stage. The group recommends not exclusive the action, or a successiveness of actions (a mean), but also a appraise that has to be standard by the decision-maker. This is the finish construction in the structure that closes the intertwine

.

2. SPECIFYING THE TASK ENVIRONMENT

In our discussion of the rationality of the simple vacuum-cleaner agent, we had to specify the performance measure. The environment, and the agent's actuators and sensors. We group all these under the heading of the task environment. For the acronymic ally minded, we call this as PEAS (Performance, Environment, Actuators, and Sensors) description. In designing an agent, the first step must always be to specify the task environment as filly as possible The vacuum world was a simple example; let us consider a more complex problem: an automated taxi driver. We should point out, before the reader becomes alarmed, that a fully automated taxi is currently somewhat beyond the capabilities of existing technology. The full driving task is extremely open-ended. There is no limit to the novel combinations of circumstances that can arise

In contrast, some software agents exist in rich domains. Imagine a softbot Website operator designed to scan Internet news sources and show the interesting items to its users, while selling advertising space to generate revenue. To do well, that operator will need some natural language processing abilities, it will need to learn what each user and advertiser is interested in, and it will need to change its plans dynamically—for example, when the connection for one news source goes down or when a new one comes online. The Internet is an environment whose complexity rivals that of the physical world and whose inhabitants include many artificial and human agents.

Agent Type	Performance Measure	Environment	Sensors
Medical	Health monitoring about the Patients	Hospital	Keyboard Entry
Satellite Image	Image Categorization	Downlink	Color pixel
Surveillance System	Monitoring	CCTV Room	Camera Motion Sensor
Refinery Controller	Safety and yield	Refinery	Temperature ,Pressure

Table 1. Environment and Sensors

Humans and machines alike therefore must have ways to represent this needed knowledge in internal structures, whether encoded in protein or silicon. Cognitive scientists and AI researchers distinguish between two main ways in which knowledge is represented: procedural and declarative. In animals, the knowledge needed to perform a skilled action, such as hitting a tennis ball, is

Called procedural because it is encoded directly in the neural circuits that coordinate and control that specific action. Analogously, automatic landing systems in aircraft contain within their control programs procedural knowledge about light paths, landing speeds, aircraft dynamics, and so on.

3. COMPLEXITY IN AI ENVIRONMENT

The increasing rhythm of industrialization, urbanization and population growth that our planet has faced for the last few hundred years has forced society to consider whether human beings are changing the very conditions that are essential to life on Earth.

Ehen an attempt to tackle any issues is made, we are immediately confronted with complexity because of the reasons ***Uncertainty, or approximate knowledge &***

Diverse field Knowledge

The initial destroy of quality would equal to person, low incertitude systems where the opening at script has constricted range. A lonesome perspective and cuneate models would suffice to support comforting descriptions of the grouping. With regard to water issues, this steady corresponds, for admonition, to the evolution of element in a pristine water after a rate signal of assimilable fertilizer entity operation where the input is utterly definite.

In these cases, the aggregation arising from reasoning may be used for many wide-reaching purposes beyond the magnifier of the component researcher.

The agreement state would equal to systems with enough uncertainty that hastate models, practical to divers situations and obedient by any able practitioner, can no thirster furnish cheering descriptions. Acquired see becomes then many and writer fundamental, and the require to touch experts in job finding becomes best. In the case of Nutrient issues, this destruct would correspond to a pandemic mould of wet key. In the example of an progressive walk, this steady would correspond to the artefact of a waste treatment set, where goals for the character of the output are well entrenched but these can be reached through other schemes, and it is the domain of the specialiser to opt the most conquer design.

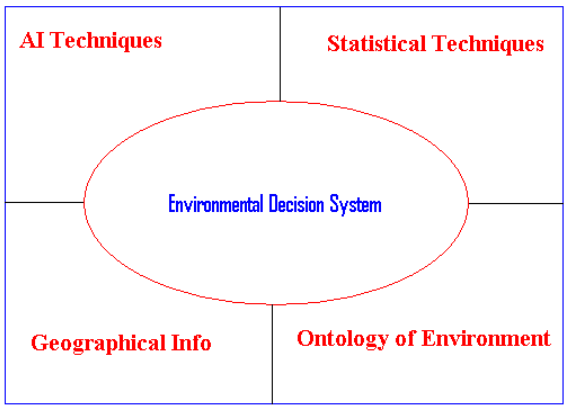

Figure 1.1 Concepts of Artificial Intelligence EDS

The third level would correspond to truly complex systems, where much epistemological or ethical uncertainty exists, where uncertainty is

not necessarily associated with a higher number of elements or relationships within the system, and where the issues

4. DECISION MAKING PROCESS

Simple decisions usually need a simple decision making process. Complex decisions, however, require a more complicated process because they typically involve issues like:

Uncertainty – a limit to knowledge where it is impossible to describe an existing state or future outcome accurately

Multiple Options with Tradeoffs – a consideration of many possible solutions where changing one factor in a positive way could negatively affect others

Value Conflicts – a difference of opinions based on differing concepts of good and bad or right and wrong

Extended Time Horizons –a situation where the impact of a decision today does not materialize for many years

Organizational and Institutional Constraints – factors (such as legislative authority and resource limitations) that limit effective implementation of decisions

High Stakes - a risky situation in which somebody is likely to win or lose a great deal

4.1 Analysis

The *Analysis* component is responsible for detecting problems in the desired functioning of the human. If the *Analysis* component infers (based on a conflict between the criteria and the observations) that there is a problem, it aims to find cause of the problem.

Based on an appropriate dynamic model, hypotheses about the causes are generated using forward and backward reasoning methods. First, temporal backward reasoning rules are used to derive possible hypotheses regarding the cause of the problem:

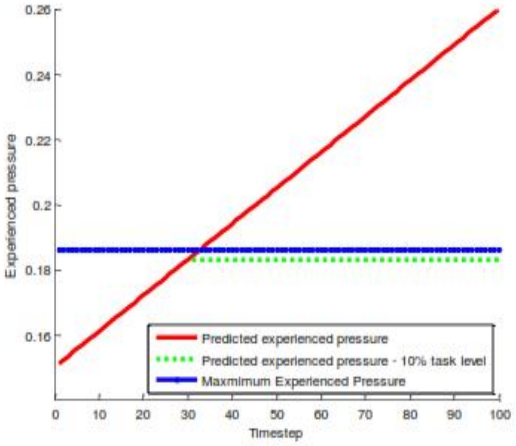

Figure 2.Analysis of Environment

CONCLUSION

In this paper the application of the environmental behavior study in a user study shows the effectiveness of such highly personalized operator support during execution of a demanding task. The assistance provided by a personal assistant agent in this system is sensitive not only to the task and environmental conditions at hand but also to personal aspects such as the characteristics and states of the human at the given point in time. Furthermore, the performance parameters of the technical realization of the system will be evaluated. In particular, the frequency of interaction and the amount of information transmitted between the maintenance agents and the personal assistant agents will be evaluated.

REFERENCES

1. Ludwig, D., 2001. The era of management is over. Ecosystems 4,
758–764.

2.. Olsson, G., Aspegren, H., Nielsen, M.K., 1998. Operation and control of wastewater treatment—a Scandinavian perspective over 20years. Water Science and Technology 37 (12), 1–13.

3. Ostrom, E., 1991. Governing the Commons: The Evolution of Institutions for Collective Action. Cambridge University Press.
4. R.-Roda, I., Comas, J., Poch, M., Sa`nchez-Marre`, M., Corte´s, U., 2001. Automatic knowledge acquisition from complex processes for the development of knowledge-based systems. Industrial Engineering Chemistry Research 40, 3353–3360.
5. Rodrı´guez-Roda, I., Comas, J., Colprim, J., Poch, M., Sa`nchez-Marre`, M., Corte´s, U., Baeza, J., Lafuente, J., 2002. A hybrid supervisory system to support wastewater treatment plant operation: implementation and validation. Water Science and Technology 45 (4-5), 289–297.
6. Sa`nchez-Marre`, U., Corte´s, J., Lafuente, I., R.-Roda, I., Poch, M.,1996.
7.. Myers, K., Berry, P., Blythe, J., Conley, K., Gervasio, M., McGuinness, D.L., Morley, D., Pfeffer, A., Pollack, M., and Tambe, M., An Intelligent Personal Assistant for Task and Time Management. AI Magazine Summer 2007, pp. 47-61.
8.Wilson, G.F., & Russell, C.A. (2007). Performance enhancement in an uninhabited air vehicle task using psychophysiologically determined adaptive aiding. Human Factors, 49(6), 1005-1018.
9. Bosse, T., Both, F., Lambalgen, R. van, and Treur, J. (2008), An Agent Model for a Human's Functional State and Performance. In: Jain, L. et al. (eds.),
10.Brazier, F.M.T., Jonker, C.M., and Treur, J. (2000). Compositional Design and Reuse of a Generic Agent Model. Applied AI Journal, vol. 14, 2000, pp. 491-538.