

ARTIFICIAL INTELLIGENCE IN BIM

The information modelling, representation and use of context is the challenge for the next few years in Artificial Intelligence, especially when we are facing now very large knowledge bases and that causes a complex of problems and multimedia. The notion of context became very important since it can capture many of the interesting and main aspects of how we understand the projects, such as relativity, locality, partiality, and context dependence.

In Artificial Intelligence, a number of formal or informal definitions of some notion of context of any project have appeared in several areas. However, all these notions of context are very diverse and serve different purposes. Giving an overview of the notion of context in Artificial Intelligence in BIM (Building Information Technology) is how it effects in the project and we focus in information modelling to present our approach of how to model context. In particular, we present a context-based model for structuring and accessing information in large information bases.

Intelligent Building Planning System Based on BIM and Artificial Intelligence:

In order to solve the problems in the construction industry field and improve the competitiveness of the construction industry in the world nowadays, BIM technology has appeared. BIM technology brings construction industry into the field of information technology. BIM and Information technology are integrated for aiming to establish a scientific and practical project performance evaluation system for construction projects based on the use of BIM technology in the construction phase to evaluate and measure the changes and edits in the project management based on the actual input data, economic efficiency, and other aspects of BIM technology used in construction. Based on the methods of function modelling, data modelling and process modelling, BIM evolutionary model and digital integrated delivery process are established. Different data sources are integrated and classified by classification and coding system and this is one of the main purposes for using Information technology in BIM, and the BIM model of operation and maintenance is obtained through data reorganization and optimization of the model. Operation and maintenance BIM model can be better compatible with facility management information system and improve the efficiency and efficiency of operation and maintenance management.

Organizing Artificial intelligence in taking decision in construction:

The practical realization of the artificial intelligence idea is in the field of neural networks, which takes the actual knowledge of construction technology, presented in the form of training samples and the learning process generates rules – knowledge describing the found artificial intelligence method of solution. It should be noted that the artificial intelligence expert system same as on the basis of experimental facts. This makes possible to create euro expert systems of control of technological process of construction management, although the solution algorithm is unknown or cannot be used due to the limitation of computer resources and objectives cannot be expressed in terms of a specified objective function. The ability to quickly learn, artificial intelligence expert systems allows them to reflect the characteristics of rapidly changing external factors and to operate relevant knowledge, but in the traditional way of formalization of knowledge of the human experts over a long and labour-intensive. Normal computer programs are made so that it remains only to quickly perform calculations and logical transformations. The machine does not ponder the meaning hidden in the teams program. For the programmer, it was clear that what information wanted to be loaded to the computer, what the purpose of the program is what the method of achieving the result is. Computers are working according to the regular program operates on abstract symbols, which is indicating anything, and logical operations, which can integrate anything. Not just to teach the machine to be free from such as rigidity. After work, and knowing what is supposed to do and how to do it, it is important to understand the processing of semantic information. However, native knowledge is largely different from human knowledge — with their stock, the ability to change the dynamics with their creativity to infinity of cognition. That's why in artificial intelligence systems operate as if the filtered knowledge — Autonomous, limited, static. Any task that is unknown to the algorithm may be related to artificial intelligence. The main problems in the construction field of artificial intelligence are search and knowledge representation. The purpose of the Artificial Intelligence is not only in the development of new theoretical constructions, but also in the creation of computers, relevant programs in modelling main character. The use of computers as material foundations of artificial intelligence as it allows you to take an inside look at the thought processes in the human brain. With the help of computers and BIM programs you can automate such human activities, which are called intellectual and are considered to be available to engineers. Methods of teaching can be built on the genetic algorithms used for solving problems in a random selection, combination and variation of the desired parameters using the mechanisms similar to natural selection in nature. As soon as the Artificial Intelligence can view the image of the project we want, it begins to turn on certain

layers and groups of functions, which will help it to identify and category the main attributes of the project. Gradually, the Artificial Intelligence learns which of these layers are of the greatest importance, and reinforces the right connections, and weak connections ignored. This is a very long, iterative process of learning system, built on the principle of feedback. And then there are two possibilities: either people will fix computer errors, or providing to the correct choice or Artificial Intelligence of sufficient volume of classified data, will be able to perform by self-testing. The result of this test, it will be clear that the most correct indices in all layers lead to the most accurate requirements. And now, when we have a small idea of how many steps need to be done in order for the system confidently able to identify the target, let's think about the complexity of the system that will be able to identify any thing in the project.

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