Abstract

Several trials has been made to simulate human’s memory with different techniques. This memory has very complicated structure with enormous storage space of data. It has also different memory categories and organizations such as semantic memory. The semantic memory itself has different models according to psycholinguistic view. This paper introduces a novel semantic memory model according to neural fuzzy concept with the use of Fuzzy Inference System (FIS). FIS is used to implement the neural network that simulates the neurons for human’s memory stored data structure. The use of fuzzy system combined with neural network (neural-fuzzy) here helps to use a set of IF- THEN rules to either train the data or estimate the answer in the Question/Answering system built. There is a set of (what) questions asked by the user and their answer(s) is (are) estimated by the designed FIS and the software then displayed on a designed Graphical User Interface (GUI). This simulation tries to think as human’s brain does. The implementation here is occurred using approximately pulse membership functions as the entered statement will be digitalized in their corresponding order numbers. The defuzzification method is used by Sugeno type that gives constant output and
has several advantages. This helps also to give definite answer(s) to the asked question not just an answer probability scale. The GUI displays one or more answer according to the user choice. In all cases, it gives a complete meaningful statement. The simulation results are promising and encouraging.

References


Index Terms

Computer Science

Information Sciences
Keywords

Neural Network; Fuzzy Inference System; Semantic Memory; Connectionist Memory Model