

Rebecca Dias  
19/182027  
BE CMPNA

classmate

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## AISC

Q1]

Write short note on Fuzzy Neural Network.

Ans:-

- ① Fuzzy logic and neural networks are natural complementary tools in building intelligent systems.
- ② While neural network are low-level computational structures that perform well when dealing with raw data, fuzzy logic deals with reasoning on a higher level, using linguistic information acquired from domain experts.
- ③ However, fuzzy systems lack the ability to learn and cannot adjust themselves to a new environment. On the other hand, although neural network can learn.
- ④ The combination of fuzzy and neural network constitutes a powerful means for designing intelligent systems.
- ⑤ Domain Knowledge can be put into a neuro-fuzzy system by human experts in the form of linguistic variables and fuzzy rules.



- ⑥ Integrated neuro-fuzzy systems can combine the parallel computation and learning abilities of neural networks with the human-like knowledge representation and explanation abilities of fuzzy systems.
- ⑦ A neuro-fuzzy system is a neural network which is functionally equivalent to a fuzzy inference model. It can be trained to develop IF-THEN fuzzy rules and determine membership functions for input and output variables of the system.
- ⑧ Neural-Trained Fuzzy systems are being used in many commercial applications.
- i) Ford Motor company has developed trainable fuzzy systems for automobile idle-speed control
  - ii) NeuFuz, software product of National Semiconductor Corporation, supports the generation of fuzzy rules with a neural network for control applications.