Real-Life Applications of Fuzzy Logic

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Abstract:

The Fuzzy logic theory is specially based on membership functions which are simple to use in daily life like decision making. Many computerised problems are easily to solve in human-like methods and it provides an effective means for conflict resolution of multiple criteria and better assessment of options.New computing methods based on fuzzy logic can be used in the development of intelligent systems like financial, banking , networking etc..,This paper investigates mainly the application of inventory model in determining stock control in an organization.

Key words:logic,fuzzy,Tricolour,etc

Introduction:

The fuzzy logic maximise the momentum about our ideas in various research problems. It gives the new way of approach to find the solutions of being either absolutely true or false. It also provides the various approach to solve the multilevel programs and calculate the solution easily. The interruption between the teacher and learner is quite complicated because of the language phenomenon. But the simple standard procedure in the fuzzy logic systems helps the learner/teacher to get a better way to verify the real life problems.

Definition:

1. Concept for fuzzy set

- Definition (Membership function of fuzzy set)
- In fuzzy sets, each elements is mapped to [0,1]
- by membership function.
- $A : X [0, 1]$
- Where [0,1] means real numbers between 0 and 1 (including 0 and 1).

2. Extension Principle

The extension principle is a basic concept of fuzzy set theory that provides a general procedure for extending crisp domains of mathematical expressions to fuzzy domains. This procedure generalizes an ordinary mapping of a function f to a mapping between fuzzy sets.

Why Fuzzy Sets

It enables one to work in uncertain and ambiguous situations and solve ill-posed problems or problems with incomplete information.

PRACTICAL APPLICATION

Tricolour Technology:

In this process, the data will be extracted by converting it into three colours namely red, green and blue.

Here the image from the sender is split into three QR code namely

- QR Red
- QR green
- QR Blue

Information Decoding:

The algorithm for decoding the image was given by

- Convert the image into black and white.
- By using Text feature and neural network, detect the QR Code.
- Retrieve the colour of detected bar code.
- By using fuzzy logic, enhance the colour of QR code.
- Split the QR Code into tricolour (red, blue and green) QR code.
- Decade the QR code to get the original file.

QR-Code Structure:

There are large of area patterns in a QR code each has different functions as given below:

Normal bar code

Finder Patterns: Finder patterns allowed the scanning machine to high speed reading. These patterns were located in any three of the four corners.

Colour QR Code:

CONSLUSION:

The fuzzy logic maximise the momentum about our ideas in various research problems. It gives the new way of approach to find the solutions of being either absolutely true or false. It also provides the various approach to solve the multilevel programs and calculate the solution easily. The interruption between the teacher and learner is quite complicated because of the language phenomenon. But the simple standard procedure in the fuzzy logic systems helps the learner/teacher to get a better way to verify the real life problems.

The contributions of this research paper are as follows:

(1) It gives the easiest method to solve the real world problems.

(2) All the logics which are discussed in this thesis are human-like problem.

(3) It gives various terms of logics for decision making.

(4) It helps in developing the artificial identification process.

(5) Various simple tools which are used in research operations were discussed.

References

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