The New Similarity Measure for Fuzzy Sets and its Application to Medical Diagnostic Reasoning

Abstract

In this article we shall deal with the new Similarity measure for Fuzzy sets based on the extended definition of complementation. Measuring similarity between Fuzzy sets is very important in the application of Fuzzy set theory. The new Similarity measure is based on the fact that Fuzzy membership function and Fuzzy membership value for the complement of a Fuzzy set are two different things. In this paper, our purpose is to put forward an algorithm to show the effectiveness of this new Similarity measure in supporting Medical Diagnostic reasoning. Also, we shall demonstrate the application of the proposed algorithm evaluating some collected data and verify the obtained results with the help of traditional Hamming Distance and Euclidean Distance measures.

References

- Hemanta K. Baruah, &quot;The Theory of Fuzzy Sets: Beliefs and Realities&quot;,
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Index Terms

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Applied Mathematics

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Fuzzy reference function

Similarity measure

Medical Diagnostic reasoning.