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Application of Intuitionistic Fuzzy Set and Fuzzy Set in Medical Diagnosis.

In this paper a new attempt has been made for medical diagnosis by utilizing both fuzzy and intuitionistic fuzzy frameworks. For this purpose a medical knowledge base is required. To form the knowledge base five symptoms such as 'Temperature, Headache, Stomach Pain, Cough and Chest Problem' and five diseases such as 'Viral Fever, Malaria, Typhoid, Stomach Problem and Chest Problem' are considered. It is also assumed that the patients' symptoms may take any value on the standard fuzzy scale having five polar terms such as 'Very Low, Low, Medium, High, Very High'. The degree of confidence of the experts for measuring each of these symptoms is inherently involved with each of the aforementioned linguistic terms. Then a medical knowledge base is formed using a set of fuzzy decision rules. The antecedent part of the rules contains linguistic values of the patients' symptoms with different degree of confidence of the experts and the consequent part reveals the degree of association and the degree of non-association between the symptoms and diagnosis. Now a set of n patients is considered. For each patient a set of symptoms is given. In these situations, appropriate fuzzy reasoning scheme is used to determine a proper diagnosis for each patient with the given values of tested symptoms. (Received September 25, 2012)