Title:	Design and Development of an Algorithm for Fuzzy Entropy
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Abstract: A measure is developed for measuring the amount of information given when the characterizing function of a fuzzy set is only partly specified. Its modification is considered when an aprior characterizing function for the set is also given. For a fuzzy set, we may not given the values of all of mA(X1), mA(X2)……. mA(Xn), but we may give some partial information about these in the form of equality or inequality relation between the values of these. We have given a method for measuring the information provided by each of these pieces of knowledge. This knowledge will change if some prior information based on intuition or experience is available about the possible values of these membership functions. We have considered here how this information is modified in this case. Finally we have taken a general situation when we have measured some partial knowledge given about n positive real numbers and we have evaluated the information contained in this partial knowledge. This thesis deals with probabilistic measures of information. A large number of measures of probabilistic information have been developed during the last five decades. Probabilistic measures of fuzzy information include fuzzy entropy, fuzzy directed divergence, fuzzy distance, fuzzy total ambiguity etc. Fuzzy uncertainty is different from probabilistic uncertainty. Fuzzy entropy measures uncertainty due to fuzziness of information, while probabilistic entropy measures uncertainty due to the information being available in terms of a probability distribution only. A close link has been established between measure of information for probabilities and fuzzy set cases. This a step in the direction of integrating these two approaches to understand uncertainty. In this thesis incomplete quantitative data has been dealt by using the concept of fuzzy entropy. Genetic programming has been used to classify the incomplete data. Certain attributes related to the data have been considered. Test data used in this knowledge discovery algorithm knows the entire attribute clearly. The developed algorithm is very effective and can be used in the various application related to knowledge discovery and machine learning. The developed knowledge discovery algorithm using fuzzy entropy has been tested for verity of incomplete data sets pertain to various application and it is found that the error level is merely ± 4.40%, which is far better than other available knowledge discovery algorithms.

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For further development and application of fuzzy inference systems in interactive mode can be used in the following graphical tools that are part of the package Fuzzy Logic Toolbox. 1. Editor fuzzy inference systems FIS (FIS Edition) or abbreviated pedaktor FIS shown in Figure 4.1. Editor fuzzy inference systems FIS is the primary tool used to create and edit fuzzy inference systems in graphical mode. 1. The system design of a fuzzy inference in fuzzyTECH may have multiple blocks rule (Rule Blocks) fuzzy productions, each of which may have its own input and output linguistic variables. The individual units of the rules can be connected in series or in parallel fashion as shown in Figure 4.8. View Fuzzy Entropy Research Papers on Academia.edu for free. Shannon entropy calculates the ratio of an element between faces, and fuzzy theory calculates the membership of the entropy with 1. More details will be mentioned in Section 3. The learning performance is better than others as it is very simple, and only need two data per learning. By using factors that don't usually change during the life, the method will have a high accuracy. Traffic accident data for three years (2004-2006) are used in development and testing the model. The proposed algorithm is compared with a fuzzy entropy based algorithm using image quality assessment measures Feature Similarity Index Measurement (FSIM) and Gradient Similarity Measurement (GSM). In the fuzzy control design methodology, we ask this operator to write down a set of rules on how to control the process, then we incorporate these into a fuzzy con-troller that emulates the decision-making process of the human. In other cases, the heuristic information may come from a control engineer who has performed exten-sive mathematical modeling, analysis, and development of control algorithms for a particular process. Again, such expertise is loaded into the fuzzy controller to au-tomate the reasoning processes and actions of the expert. to tune a fuzzy model of the plant and use the parameters of such a model in the on-line design of a controller. In Chapter 7 we introduce fuzzy supervisory control.