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RESEARCH ARTICLE

A HYBRID APPROACH FOR HANDLING UNCERTAINTY - PROBABILISTIC THEORY, CERTAINTY FACTOR AND FUZZY LOGIC

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Abstract— Real world is actually revolving around data i.e. data plays a very important role in the current information era. Different types of uncertainty are addressed in different forms of data. Till date, probabilistic theory, fuzzy logic, certainty factor was developed to handle uncertainty. All these approaches were quite successful in handling uncertainty but there are some situations where when these methods taken individually, failed to handle uncertainty. So there was a need to develop a hybrid approach which will handle uncertainty to a high level.

In this paper, we present an approach wherein we integrate probabilistic theory, certainty factor and fuzzy logic concepts. Once we use all these approaches together, uncertainty model is developed which will address the various limitations inherent in these approaches when applied individually.

Keywords—Certainty Factor; Probability Theory; Fuzzy Logic; Uncertainty; Transitive Dependency; Baye's Theorem

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