

## **STUDY OF INFLUENTIAL NODES OF FUZZY GRAPHS IN FUZZY MODELS**

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In this paper we give the role of fuzzy graphs in fuzzy models like Fuzzy Cognitive Maps (FCMs) and Fuzzy Relational Maps (FRMs). Our study of these fuzzy graphs is different from the usual study as we have the nodes or edges of a fuzzy graph to be dependent on the fuzzy model in which they are used.

In this paper we define different types of influential nodes of fuzzy graphs related with the fuzzy models like Fuzzy Cognitive maps (FCMs) models and Fuzzy Relational Maps (FRMs) models. This study of labeling the nodes as most influential, more influential, just influential, influential, less influential and least influential nodes of the fuzzy graphs associated with these fuzzy models is carried out in this paper. This study is new and innovative leading to several important observations on the nodes used in the fuzzy models. This answers the natural question whether the node which has the maximum number of edges incident to it is the most influential node in a fuzzy graph associated with fuzzy models. This is answered in the affirmative.

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