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Fuzzy logic programming. (English) Zbl 1015.68036
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Summary: We consider the theory of fuzzy logic programming without negation. Our results cover logical systems with a wide variety of connectives ranging from t-norm and conorms, through conjunctors and disjunctors and their residuals to aggregation operators. Rules of our programs are many valued implications. We emphasize, that in contrast to other approaches, our logic is truth functional, i.e. according to P. Hájek, we work in fuzzy logic in narrow sense. We prove the soundness and the completeness of our formal model. We deal with applications to threshold computation, abduction, fuzzy unification based on similarity. We show that fuzzy unification based on similarities has applications to fuzzy databases and flexible querying.

MSC:

68N17 Logic programming
03B52 Fuzzy logic; logic of vagueness

Cited in **50** Documents

Keywords:

fuzzy logic programming

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