

Badaloni, Silvana; Falda, Marco; Giacomini, Massimiliano

Integrating quantitative and qualitative fuzzy temporal constraints. (English) Zbl 1098.68101

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Summary: We address the problem of representing and reasoning with temporal knowledge in a very general and flexible manner. To this aim we propose a model of integration of quantitative and qualitative temporal information affected by vagueness and uncertainty. We extend our fuzzy qualitative temporal framework IA^{fuz} integrating the treatment of fuzzy quantitative constraints modeled as trapezoidal distributions. To do this, we extend the treatment of fuzzy temporal constraints considered in the literature and we generalize in a fuzzy direction the classical hybrid approach of temporal constraints integration proposed by Meiri. To show the full expressiveness of the new system, we apply it to represent the fuzzy temporal knowledge in a typical scheduling example.

MSC:

68T01 General topics in artificial intelligence

68T20 Problem solving in the context of artificial intelligence (heuristics, search strategies, etc.)

Cited in **2** Documents

Keywords:

temporal reasoning