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Faceted Knowledge Representation

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Abstract

Faceted Knowledge Representation provides a formalism for implementing knowledge systems. The basic notions of faceted knowledge representation are "unit", "relation", "facet", and "interpretation". Units are atomic elements and can be abstract elements or refer to external objects in an application. Relations are sequences of matrices of 0's and 1's (binary matrices). Facets are relational structures that combine units and relations. Each facet represents an aspect or viewpoint of a knowledge system. Interpretations are mappings that can be used to translate between different representations. This paper introduces the basic notions of faceted knowledge representation. The formalism is applied here to an abstract modeling of a faceted thesaurus as used in information retrieval.

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