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A rational reconstruction of the domain of feature structures.
(English. English summary)
Feature structures play an important role in computational linguistics and as data structures for constraint programming languages; they arise as trees bearing information about “subtree agreement”, i.e., information about whether specific subtrees are identical. The author shows that this intuitive picture can be used to characterize the class of feature structures under their usual subsumption ordering: the domain of feature structures is determined by universal conditions on a domain that is intended to provide models of trees with subtree agreement constraints.
Then this characterization is parameterized in order to obtain similar characterizations of various different notions of feature structure, such as acyclic structures, structures with appropriateness conditions and structures with apartness conditions (used to model path inequalities). These generalizations indicate that the given construction is independent of the application to feature structures.
The author’s approach is based on domain theoretic and logical concepts and the technical results rely heavily on category-theoretic notions.
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