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REPRESENTATION OF KNOWLEDGE AND OPERATIONS WITH IT

Tutorial

The book describes various ways of presenting knowledge in global databases of commutative and non-commutative deduction systems, developed to a large extent in the works of predecessors. Formalized operations for obtaining new solutions are considered, in particular, ways to expand databases that correspond to training procedures. The main attention is paid to methods of formation based on mathematics and mathematical logic of artificial intelligence languages, such as Prolog and Lisp. Features of using fuzzy logic for creating algorithms and artificial neural networks are discussed. Technologies for creating plans for robots taking into account conflicts of goals are presented. The problems of description and implementation of semantic networks and the semantic web are discussed. It is interesting as a study guide for graduate students and students of the schools of natural sciences and computer sciences who study artificial intelligence systems based on logic.

CONTENTS