GUEST EDITOR'S NOTE

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This special issue of Fundamenta Informaticae contains nine papers addressing various issues of current research in the area of logics for artificial intelligence. We refer here either to classical propositional or predicate calculus or to logics which can be divided according to R. Turner [4] into two groups: those that rival classical logics and those which extend it. Multi-valued logics, fuzzy logic and possibilistic logic can be placed in the first group. The second group would contain modal logics and temporal logic. Multi-valued, fuzzy and possibilistic logics deal with areas of vagueness and incomplete information. Modal logics are concerned with arguments involving the concepts of necessity and possibility. They have been introduced into AI in the form of logics of knowledge, belief and action by B. Moore [3] and K. Konolige [1]. Temporal logics have been introduced to formalize events, actions and plans [2]. Papers in this special issue cover quite a large spectrum of problems related to logics for AI. The reader will find here papers introducing new families of logics, papers dealing with many classical problems in AI and finally papers related to building intelligent systems.

Paper by D. Dubois, J. Lang and H. Prade generalizes possibilistic logic by assigning to each formula a time set which represents the set of instants where the formula is certainly true.
Paper by M. Fitting is introducing a new family of many-valued modal logics enlarging the same the variety of logics available for Artificial Intelligence.
Paper by R. Parikh develops a model theory for a non-monotonic logic of knowledge and shows that it corresponds to normal applications of a non-monotonic rule of inference due to McCarthy.
Paper by K. Konolige looks at quantification in autoepistemic logic, which is a modal logic of self-knowledge.
Paper by J. Horty and R. Thomason examines the problem of conditionals in the context of nonmonotonic reasoning.
Paper by S. Kraus, D. Perlis and J. Horty shows how Bush-Gorbachev problem due to McCarthy might be solved using autocircumscription and introspective circumscription.

Paper by A. Maida, J. Wainer and S. Cho shows how the ability to conduct belief reasoning can be reduced to principles of introspection and analogy-based reasoning.

Paper by T. Huynh, L. Joskowicz, C. Lassez and J.-L. Lassez addresses the problem of building intelligent systems to reason about linear arithmetic constraints.

Paper by Z. Ras develops a model of an intelligent distributed information system and discusses the problem of query resolution.

We hope this special issue will raise the reader's interest in the area of logics for artificial intelligence.

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References

[1] Konolige, K., "A deduction model of belief and its logics", Technical Note 326, Menlo Park, CA, SRI International, AI Center, 1984

[2] McDermott, D., *"A temporal logic for reasoning about processes and plans"*, Cognitive Science, 6(2), 1982, 101-155

[3] Moore, R.C., "A formal theory of knowledge and action", in Hobbs, J.R. and Moore, R.C. (eds), *Formal theories of the commonsense world*, Norwood, N.J., Ablex Pub. Co., 1985

[4] Turner, R., "Logics for artificial intelligence", Ellis Horwood Series in AI, Chichester, England, 1984