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Book Review

Reiner Hähnle. *Automated Deduction in Multiple-valued Logics*. Clarendon Press, Oxford, 1993, ix + 172 pages.

Automated theorem proving is now a firmly autonomous domain of investigation. At its early stage it was focused mainly on the problem of mechanizing classical proof procedures so they would be entirely covered or, at least, supported by an actual or theoretical computer. To obtain desirable results, the most frequently used were the methods based on different versions of refutation for propositional and first-order logic.

An interest in various nonclassical logics as related to computer science stemming from successful applications has grown recently. This, in turn, has stimulated investigation of automated proof procedures. Hähnle's book is intended to be a monograph on automated deduction in multiple-valued logics. The work consists of nine chapters, including an introduction and conclusion. These are followed and completed by references and an index.

1 In the introduction Hähnle professes the faith. First, he rightly states that the book is the first monograph exclusively devoted to automated theorem proving in multiple-valued logics. There and later, he uses the term 'many-valued' as a replacement for 'multiple-valued' and 'multi-valued'. It is common practice to use these terms interchangeably in the literature with, perhaps, an inclination to note 'multiple-valued' in the environment of computer science. The author remarks that the existing books deal either with automated theorem proving or with many-valued logics but never the two topics together. Furthermore, for some other systems of nonclassical logics such as intuitionistic, modal, linear, conditional, nonmonotonic, and temporal logics, the references on theorem proving are quite numerous. The author explains this by the fact that these systems found applications in computer science. As for many-valued logics there are several reasons which cause unavailability of a good device or algorithm appropriate for computation and proving; first, the widespread opinion that many-valued logic is not very useful and that it lacks convincing applications; and secondly, according to Hähnle, a nonhomogeneity of the subject of many-valuedness,

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