Lattice Functions and Equations /

Rudeanu, Sergiu

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Monografía

Lattice (Boolean) functions are algebraic functions defined over an arbitrary lattice (Boolean algebra), while lattice (Boolean) equations are equations expressed in terms of lattice (Boolean) functions. This self-contained monograph surveys recent developments of Boolean functions and equations, as well as lattice functions and equations in more general classes of lattices; a special attention is paid to consistency conditions and reproductive general solutions. The contents include: - equational compactness in semilattices and Boolean algebras; - the theory of Post functions and equations (which is very close to that of Boolean functions and equations); - a revision of Boolean fundamentals; - closure operators on Boolean functions; - the decomposition of Boolean functions; - quadratic truth equations; - Boolean differential calculus; - Boolean geometry and other topics. There is also a chapter on equations in a very general sense. Applications refer to graph theory, automata theory, synthesis of circuits, fault detection, databases, marketing and others

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