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Decision procedures for the isomorphism problem in unary automatic structures.

Finite state automata are Turing machines with fixed finite bounds on resource use. They therefore provide a good model of real-time computation. We discuss classes of structures presented by restricted automata. Characterizations of these structures have paved the way for efficient solutions to questions such as the isomorphism problem, which in the setting of computable structures are highly undecidable. This is joint work with Khoussainov and Liu, and with Liu. (Received August 15, 2008)