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Restivo, Antonio (I-PLRM-MIF); Vaglica, Roberto (I-PLRM-MIF)
A graph theoretic approach to automata minimality. (English summary)

Using notions from graph theory, the authors test whether a deterministic finite automaton (DFA) is minimal with respect to the cardinality $\#Q$ of its set of states $Q$. For the restricted class of strongly connected and complete DFAs, they focus on the dependence of the minimality of a DFA on the choice of the set $F$ of its final states or on $\#F$. It is shown that (i) the class of “$k$-uniformly minimal automata” (i.e., DFAs which are minimal for each $F$ with $\#F = k$) can be characterized in graph-theoretic terms, and (ii) there exists a polynomial-time algorithm to test the uniform minimality (i.e., $k$-uniform minimality for each $k \leq \#Q$) of a DFA.

Reviewed by Peter R. J. Asveld

References


Note: This list reflects references listed in the original paper as accurately as possible with no attempt to correct errors.

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